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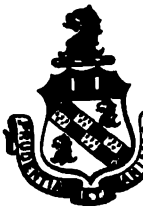

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SANITARY AND STATISTICAL REPORT

OF THE

SURGEON-GENERAL OF THE NAVY

FOR

THE YEAR 1880.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
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BUREAU OF MEDICINE AND SURGERY.

NAVY DEPARTMENT,
BUREAU OF MEDICINE AND SURGERY,
November 18, 1881.

SIR: I have the honor to submit, in accordance with your order of the 1st instant, the following report showing the sanitary condition of the Navy during the year ending December 31, 1880, the estimates of appropriations required to meet the exigencies of the service for the fiscal year ending June 30, 1883, and the condition of the Naval Hospital Fund.

Very respectfully, your obedient servant,

PHILIP S. WALES,
Surgeon-General, U. S. Navy.

Hon. WM. H. HUNT,
Secretary of the Navy.

REPORT

OF

THE SURGEON-GENERAL OF THE NAVY

FOR THE YEAR 1880.

The personnel of the medical corps of the Navy has maintained its high reputation for intelligence and efficiency, and has participated with credit in the various meetings and proceedings of its professional brethren in civil life. A full representation was present at the last annual meetings of the American Medical Association, of the National Sanitary Association, and also of the late International Medical Association.

The various hospitals have been brought to a higher state of efficiency by the introduction of the latest improvements in ventilation and heating, and by thorough repairing, which had been much needed for several years past. It may now be said that no similar institutions in this country surpass them in their adaptation to the necessities and requirements of the sick and wounded.

The following are the estimates of this bureau for the fiscal year ending June 30, 1883:

Estimates of appropriations required for the service of the fiscal year ending June 30, 1883, by the Bureau of Medicine and Surgery.

Detailed objects of expenditure and explanation.	Estimated amount which will be required for each detailed object of expenditure.	Amount appropriated for the current fiscal year ending June 30, 1881.
SALARIES.		
For one chief clerk (R. Stat., p. 70, sec. 416)	$1,800 00	
For one clerk, class three (appropriated, 21 Stat. at L., p. 406, sec. 1)	1,600 00	
For one clerk, class two (appropriated, 21 Stat. at L., p. 406, sec. 1)	1,400 00	
For one clerk, class one (appropriated, 21 Stat. at L., p. 406, sec. 1)	1,200 00	
For one clerk (appropriated, 21 Stat. at L., p. 406, sec. 1)	1,000 00	
For one messenger (appropriated, 21 Stat. at L., p. 406, sec. 1)	720 00	
For one laborer (appropriated, 21 Stat. at L., p. 406, sec. 1)	660 00	
	8,380 00	$8,380 00
CONTINGENT.		
For stationery and miscellaneous items (appropriated, 21 Stat. at L., p. 406, sec. 1)	400 00	400 00
Restoring messenger to former rank and pay (submitted)	120 00	
Restoring laborer to former rank and pay (submitted)	60 00	
	180 00	

Estimates of appropriations required, &c.—Continued.

Detailed objects of expenditure and explanation.	Estimated amount which will be required for each detailed object of expenditure.	Amount appropriated for the current fiscal year ending June 30, 1881.
MEDICAL DEPARTMENT.		
For support of the Medical Department, for surgeons' necessaries, for vessels in commission, navy-yards, naval stations, Marine Corps, and Coast Survey (appropriated, 21 Stat. at L., p. 335, sec. 1)	$45,000 00	$45,000 00
NAVAL HOSPITAL FUND.		
For the maintenance of the naval hospitals at Portsmouth, N. H., Chelsea, Mass., Brooklyn, N. Y., Philadelphia, Pa., Annapolis, Md., Washington, D. C., Norfolk, Va., Pensacola, Fla., Mare Island, Cal., and Yokohama, Japan (appropriated, 21 Stat. at L., p. 335, sec. 1)	50,000 00	50,000 00
CONTINGENT.		
For contingent expenses of the Bureau, freight on medical stores, transportation of insane patients, advertising, telegraphing, purchase of books, expenses attending the board of medical examiners, purchase and repair of wagons, harness, purchase and feed of horses and cows, trees, garden tools, seeds, &c. (appropriated, 21 Stat. at L., p. 335, sec. 1)	15,000 00	15,000 00
REPAIRS.		
For repairs to Naval Laboratory, naval hospitals and appendages, including roads, wharves, out-houses, sidewalks, fences, gardens, farms, cemeteries, &c. (appropriated, 21 Stat. at L., p. 335, sec. 1)	30,000 00	30,000 00
CIVIL ESTABLISHMENT.		
For pay of employés at the several naval hospitals, navy-yards, Naval Laboratory, and Naval Academy (appropriated, 21 Stat. at L., p. 335, sec. 1)	40,000 00	40,000 00
NAVAL LABORATORY, WASHINGTON, D. C.		
For continuing investigations of atmospheric impurities (appropriated, 21 Stat. at L., p. 335, sec. 1)	1,500 00	1,500 00

RECAPITULATION.

Medical Department	$45,000 00	$45,000 00
Naval Hospital Fund	50,000 00	50,000 00
Contingent	15,000 00	15,000 00
Repairs	30,000 00	30,000 00
Civil Establishment	40,000 00	40,000 00
Naval Laboratory, Washington, D. C	1,500 00	1,500 00
Total	181,500 00	181,500 00

NAVAL HOSPITAL FUND.

The condition of this fund is as follows:

Balance on hand October 1, 1880	$92,899 93
Transferred to the credit of the fund in settlement of accounts by the Fourth Auditor from October 1, 1880, to October 1, 1881	121,571 09
Credit by appropriation for the fiscal year ending June 30, 1881	50,000 00
Total	264,471 02
Deduct amount expended from October 1, 1880, to October 1, 1881	91,435 58
Balance on hand October 1, 1881	173,085 44

INSANE OF THE NAVY.

On the 30th September, 1880, there remained under treatment in the Government Hospital for the Insane—

One commander, 2 lieutenant-commanders, 1 passed assistant surgeon, 2 first assistant engineers, 1 late ensign, 9 seamen, 1 ordinary seaman, 1 ordinary seaman (extra), 1 seaman (extra fireman), 7 landsmen, 9 marines, 1 late seaman, 2 beneficiaries, 1 second-class boy, 1 ship's corporal; total	40
Admitted during the year ending September 30, 1881: 1 paymaster's yeoman, 1 captain of hold, 1 seaman, 1 coal-heaver, 4 marines, 5 beneficiaries, 3 third-class boys; total	16
Total number under treatment during the year	56
Discharged during the year ending September 30, 1881: 1 ship's corporal, 2 marines, 4 beneficiaries; total	7
Remaining at the end of the year: 1 commander, 2 lieutenant-commanders, 1 passed assistant surgeon, 2 first assistant engineers, 1 late ensign, 1 paymaster's yeoman, 1 captain of hold, 10 seamen, 1 ordinary seaman (extra), 1 ordinary seaman, 1 seaman (extra fireman), 1 late seaman, 7 landsmen, 1 coal-heaver, 11 marines, 3 beneficiaries, 1 second-class boy, 3 third-class boys; total	49

SANITARY CONDITION.

The returns show a gratifying improvement in the health of the Navy over the previous year. This is due to the greater attention now paid to all matters appertaining to the sanitary surroundings of the sailor. The subjects of ventilation, food, clothing, exercise, and recruiting have been fully and ably discussed by the medical officers of the Navy in the publications of the bureau, which have attracted general attention both in this country and abroad, and have led to the adoption of measures calculated to develop the highest standard of health compatible with the peculiar mode of life of sea-faring men. Although much has already been done in these directions, yet the work is still far from completion. Only a few of our vessels have as yet been provided with appropriate apparatus for ventilation, and it is earnestly hoped that in all future construction and repairs of ships special attention shall be paid to this matter.

It is also suggested that the system of cooking and rationing may be improved by the adoption of the plan in universal use in the passenger ships crossing the Atlantic, where the food is prepared and served by a special force, thus relieving the crew from this species of drudgery and securing better cooking than can be had from men not specially trained in this art. The importance of properly cooked food to health is a matter of common experience on shore, where resources are at hand to vary the diet at will. Of still more importance is it that the restrictive dietary of the sailor be made as savory and as acceptable as possible, which is scarcely practicable under the system of selecting temporary cooks from the crew, as is done in the Navy. The large number of diseases of the digestive organs so common on shipboard are in part due to this cause. That the present ration may be greatly varied in preparation, to be more acceptable to the palate, scarcely admits of doubt, and it would be advantageous to prepare plain directions how this might be done, after thorough trials by competent persons. I would therefore recommend the organization of a board to take this important matter into consideration.

Dr. Kershner, of the U. S. S. Minnesota, speaking on the subject, says:

Considerable complaint has been made by the boys at various times about the food. Five rations in every mess of twenty boys have been commuted and the money spent

in buying articles not on the supply table. A greater variety of articles were thus obtained, and messes were supplied with oatmeal, corn-meal, milk, and various vegetables, as well as poultry and meat.

In a letter to the department in October, 1879, I stated that the ration was insufficient, in some respects, to supply the wants of growing boys. I do not now think the remedy has been reached by the commutation of rations and purchase of provisions with the money, or that the nutritive equivalent of the Navy ration can be purchased by money obtained by its commutation. I therefore think it necessary that the commutation price of the ration be increased, or that articles not now in the ration be allowed. Especially should potatoes, onions, tomatoes, corn (green or canned), oatmeal, corn-meal, hominy, cheese, and a larger quantity of bread, fresh meat, and sugar in some form be added. If such changes could be made it would be of great use to the boys, promoting their physical development, rendering them more contented, enabling them to endure the hardships of a sailor's life. The meal hours are about the same as on a regular man-of-war, viz: Breakfast at 8 o'clock a. m., dinner at 12 o'clock m., supper at 5 o'clock p. m., and a cup of coffee at 4 o'clock a. m. when all hands are called. The latter I believe to be injurious, as coffee taken alone into an empty stomach has a tendency to produce indigestion and nervousness. It would, therefore, be better to omit the early morning coffee, and give a breakfast of a substantial character at 5 or 6 o'clock, which should include meat. The supper should be later, 7 o'clock being a much better hour, so that there would be but ten hours between supper and breakfast, instead of fifteen, as at present. The food is well cooked and of the best quality, and every effort made to render it as attractive and wholesome as possible. It is very important that a form of food more suitable for the wants of young boys than the Navy ration should be furnished in some way, and I therefore recommend, if the training system is to be continued, that some action be take to provide a ration suitable to their wants.

The clothing of the sailor is not fully adapted to protect his health and maintain his comfort under the trying influences of climate to which he is exposed. The present cap might be improved to protect the eyes from the glare of the sun, and shield the neck from dripping water in foul weather. The frequency of inflammation of the eyes in the returns testifies to the insufficiency of the head covering, while the preponderant figures shown in the class of respiratory diseases, especially catarrhal troubles, seem to point to the impropriety of the low-cut shirts that scarcely protect the neck and chest in inclement weather.

Greater attention is now being paid to the recruiting of men for the service, and I cannot refrain from reiterating the views expressed in my last report in regard to the necessity of having at each station suitable apartments on shore, where these examinations may be made by experienced officers, undisturbed by the noise of ship routine and the dimly lighted apartments below decks.

The extent of this work and the needs for better facilities for performing it cannot better be shown than by the following:

Table showing the number and causes of rejection of all persons examined for the United States naval service during the year 1880.

Causes of rejection.	Over 21 years of age.	Twenty-one years of age and under.	Total.
	Men.	Boys.	
I.—Zymotic diseases.			
Febris intermittens	1	2	3
Febris simplex	2	1	3
Total	3	3	6
II.—Constitutional diseases.			
Adynamia	4	2	6
Anæmia	4	1	5

Table showing the number and causes of rejection of all persons examined, &c.—Continued.

Causes of rejection.	Over 21 years of age.	Twenty-one years of age and under.	Total.
	Men.	Boys.	
II.—CONSTITUTIONAL DISEASES—Continued.			
Feeble constitution, retarded development, &c	45	69	114
Obesitas	7	.....	7
Rheumatismus	1	2	3
Scrofula	2	5	7
Syphilis	78	24	102
Total	141	103	244
III.—DISEASES OF THE EYE.			
Achromatopsia	15	20	35
Corneæ opacitas	.....	1	1
Cataracta	2	1	3
Conjunctivitis	3	1	4
Hordeolum	2	9	11
Iritis	1	.....	1
Keratitis	1	.....	1
Myopia	40	107	147
Pterygium	5	.....	5
Strabismus	.....	2	2
Visus deterior	59	46	105
Total	128	187	315
IV.—DISEASES OF THE EAR.			
Absence of tympanum	1	.....	1
Otitis	1	2	3
Otorrhœa	2	6	8
Surditas	2	1	3
Total	6	9	15
V.—DISEASES OF THE NOSE.			
Ozæna	1	1	2
Polypus	1	1	2
Total	2	2	4
VI.—DISEASES OF THE NERVOUS SYSTEM.			
Epilepsia	.....	2	2
Melancholia	1	.....	1
Obtuse intellect	.....	1	1
Paralysis	.....	1	1
Twitching of facial muscles	.....	1	1
Total	1	5	6
VII.—DISEASES OF THE CIRCULATORY SYSTEM.			
Aneurysma	4	1	5
Cor irritabile	1	.....	1
Hypertrophia cordis	13	2	15
Morbi valvularum cordis	120	67	187
Palpitatio	14	10	24
Varix	56	10	66
Total	208	90	298
VIII.—DISEASES OF THE ABSORBENT SYSTEM.			
Adenitis	.....	2	2
Total	.....	2	2
IX.—DISEASES OF THE RESPIRATORY SYSTEM.			
Aphonia	1	.....	1
Asthma	5	.....	5
Bronchitis	14	3	17
Catarrhus	2	26	28
Emphysema	1	.....	

Table showing the number and causes of rejection of all persons examined, &c.—Continued.

Causes of rejection.	Over 21 years of age.	Twenty-one years of age and under.	Total.
	Men.	Boys.	
IX.—Diseases of the respiratory system—Continued.			
Deficient size of chest	32	13	45
Phthisis	.....	10	10
Pulmonary predisposition	.....	29	29
Total	55	81	136
X.—Diseases of digestive system.			
Ascites	1	.....	1
Dentium morbi	25	157	182
Dyspepsia	1	.....	1
Fistula in ano	3	2	5
Hernia	55	30	85
Hæmorrhoides	51	8	59
Hypertrophy of liver	.....	1	1
Hepatitis	1	.....	1
Icterus	1	.....	1
Pharyngitis	1	1	2
Tonsilitis	5	46	51
Spleen displacement	1	.....	1
Total	145	245	390
XI.—Diseases of the genito-urinary system.			
Albuminuria	1	.....	1
Atrophy of testicle	.....	1	1
Cryptorchis	2	3	5
Chancroides	3	5	8
Enuresis	.....	11	11
Gonorrhœa	34	23	57
Hydrocele	.....	5	5
Masturbatio	.....	2	2
Orchitis	3	5	8
Phymosis	7	17	24
Varicocele	60	92	152
Total	110	164	274
XII.—Diseases of the organs of locomotion.			
Ankylosis	4	2	6
Spinal curvature	1	11	12
Total	5	13	18
XIII.—Diseases of the cutaneous system.			
Bunion	.....	2	2
Cicatrix	2	4	6
Eruptions on skin	.....	18	18
Eczema	.....	4	4
Herpes	1	1	2
Onychia	.....	1	1
Pediculi	.....	2	2
Pernio	1	1	2
Scabies	1	.....	1
Ulcus	6	7	13
Unguis involutis	1	6	7
Total	12	46	58
XIV.—Wounds and injuries.			
Abrasio penis	.....	1	1
Contusio	1	.....	1
Dislocatio	1	.....	1
Fractura	1	6	7
Gunshot wound, left eye	.....	1	1
Stremma	.....	1	1
Subluxatio, left shoulder	1	.....	1
Wound on thigh	.....	1	1
Total	4	10	14

Table showing the number and causes of rejection of all persons examined, &c.—Continued.

Causes of rejection.	Over 21 years of age.	Twenty-one years of age and under.	Total.
	Men.	Boys.	
XV.—MALFORMATIONS, DEFORMITIES, AND DEFICIENCIES.			
Atrophy of right leg	.....	1	1
Deformity of arm	1	.....	1
Deformity of hand	1	7	8
Deformity of palate	.....	1	1
Deformity of thorax	.....	1	1
Deformity of sternum	1	.....	1
Enlarged scrotum and penis	1	.....	1
Loss of fingers	1	.....	1
Other defects	1	24	.....
Stammering	1	4	5
Puberty, signs of absent	.....	1	1
Under all measurements	.....	43	43
Under weight and height	.....	42	42
Under height	12	87	99
Under weight	2	23	25
Total	21	234	255
XVI.—TUMORS.			
Lipoma	1	.....	1
Tumor	4	1	5
Tumor scroti	1	.....	1
Total	6	1	7
Total number examined	4,251	3,008	7,259
Total number rejected	849	1,195	2,044

ENTIRE FORCE.

There were admitted during the year from the entire force, including the cases remaining over from the preceding year (amounting to 464), 13,387 cases, of which 11,485 were discharged recovered, 111 died, 990 invalided to hospital, 321 invalided from service, and 480 continued to the succeeding year. The total loss of time to the service by disease and injury amounted to 179,435 days, giving a daily average sick-list of 491.6. The average duration of treatment was 13.4 days.

In comparison with the previous year these figures show a marked decrease in the admission and invaliding rate, but a slight increase in the death-rate, due principally to epidemic yellow fever on board the United States steamer Marion. These facts are fully set forth in the annexed table:

	Remaining from last year.	Admitted. First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
Force afloat	215	2,582	2,174	2,428	2,353	9,752
Naval hospitals	221	253	271	234	257	1,236
Naval stations	28	541	584	448	798	2,399
	464	3,376	3,029	3,110	3,408	13,387

	Discharged.								
	Recovered.	To hospital.	From service.	Died.	Total.	Continued.	Total number of sick-days.	Average number of days under treatment.	Daily average number of sick.
Force afloat	8,711	758	49	28	9,546	206	82,623	8.47	225.74
Naval hospitals	645	64	245	64	1,018	218	79,151	64.03	216.25
Naval stations	2,129	168	27	19	2,343	56	17,661	7.36	48.25
	11,485	990	321	111	12,907	480	179,435	13.40	491.60

FORCE AFLOAT.

The effective force of the Navy employed afloat during the year 1880 was 10,235, and corrected for time 9,003, an increase of 134 men over the preceding year. The total number of admissions reached 9,752, of which 8,711 were discharged recovered; 758, or 84.19 per M, invalided to hospital; and 40, or 5.44 per M, discharged from the service; 28, or 3.11 per M, died; and 206 were continued to the succeeding year. The ratio of admissions was 1083.44 per M of strength. These figures show a decrease of 99.10 per M in the admissions, 20.19 per M in the invaliding rate, and .95 per M in the death-rate. The health has not only been better than for the previous year, but is also superior to that of several foreign navies. The English, Austrian, and Prussian reports show, respectively, 1116.9 1141.78, and 1530.2 per M of admissions; 32.96, 9.85, and 16.03 per M in the invaliding rate, and 6.23, 5.1, and 8.8 per M in the death-rate.

The number of sick-days amounted to 82,623, giving a daily average sick-rate of 225.74, or 25.07 per M, a decrease of 2.52 per M from the previous year. The average duration of treatment was 8.88 days.

The following table will show the strength, relative sick-rate, number invalided, and dead in the several squadrons:

Stations.	Strength.	Number of cases of disease and injury.	Number of cases per man.	Number of days' sickness.	Average number of sick daily on board.	Ratio per M.
North Atlantic	4,407	4,367	.99	32,456	88.67	20.12
South Atlantic	532	902	1.69	8,538	23.32	43.83
Pacific	1,651	1,721	1.04	16,545	45.20	27.37
European	1,120	1,452	1.29	11 581	31.64	28.25
Asiatic	1,088	963	.88	7,837	21.41	19.67
Special service	205	347	1.69	5,666	15.48	75.51
Total	9,003	9,752	1.08	82,623	225.74	25.07

Stations.	Invalided.				Died.	
	Hospital.		From service.			
	Number.	Per M.	Number.	Per M.	Number.	Per M.
North Atlantic	471	106.86	29	6.58	13	2.95
South Atlantic	23	43.23	.....	.....	5	9.39
Pacific	128	77.53	7	4.23	4	2.42
European	43	38.39	9	8.03	3	2.67
Asiatic	72	66.17	1	.91	3	2.75
Special service	21	117.07	3	14.63	.....	.....
Total	758	84.19	49	5.44	28	3.11

The number invalided to hospital, as shown above, amounted to 758, a ratio of 84.19 per M, while the number invalided from service reached only 49, a ratio of 5.44 per M, a very considerable decrease from the preceding year. The highest invaliding ratio occurred in the European squadron, and the lowest in the South Atlantic squadron. The causes of invaliding are exhibited in the annexed table:

Classes of disease and injury.	Invalided.			
	To hospital.	Per 1,000.	From the service.	Per M.
Zymotic diseases	54	5.99	4	.44
Constitutional diseases	192	21.32	6	.66
Diseases of the nervous system	50	5.55	4	.44
Diseases of the eye	22	2.44	2	.22
Diseases of the ear	9	.99	.....	.....
Diseases of the teeth	1	.11	.....	.....
Diseases of the circulatory system	33	3.66	4	.44
Diseases of the absorbent system	13	1.44	1	.11
Diseases of the respiratory system	133	14.77	8	.88
Diseases of the digestive system	67	7.44	5	.55
Diseases of the genito-urinary system	68	7.55	4	.44
Diseases of the locomotive system	5	.55	.....	.....
Diseases of the integumentary system	19	2.11	5	.55
Non-malignant tumors and cysts	2	.22	.....	.....
Poisons	6	.66	.....	.....
Violent diseases and injuries	84	9.33	6	.66
Total	758	84.19	49	5.44

The number of deaths reached 28, a ratio of 3.11 per M, a decrease from the previous year. The highest death-rate was in the North Atlantic squadron, and the lowest in the European squadron.

The causes of death are grouped under the following headings:

Classes of disease and injury.	Deaths.	
	Cases.	Per M.
Zymotic diseases	5	.55
Constitutional diseases	1	.11
Diseases of the nervous system	3	.33
Diseases of the ear	1	.11
Diseases of the respiratory systems	7	.77
Diseases of the digestive system	1	.11
Violent diseases and injuries	10	1.11
Total	28	3.11

With regard to the healthfulness of the various stations, the Asiatic stands first, and then in order the North Atlantic, the Pacific, the European, and, lastly, the South Atlantic. This shows a variation from last year, when the North Atlantic had the first, and the South Atlantic the last, rank in the health scale.

The diseases falling under the head of the zymotic class were of more frequent occurrence on the European, and least so on the Asiatic station, while the other stations held an intermediate place.

Constitutional affections were notably more numerous on the South Atlantic and Pacific stations, and the least on the Asiatic. In nervous diseases, the South Atlantic took precedence; the minimum occurred on the Asiatic station. Diseases of the eye were largely prevalent on the South Atlantic, and least on the European station, while those of the ear were most numerous on the Pacific and least so on the Asiatic station. Diseases of the teeth were also more largely prevalent on the South Atlantic station.

The Asiatic station supplied the largest figures of diseases of the circulatory system, and the South Atlantic the smallest. Affections of the absorbent system were nearly equally divided among the various stations, with the exception of the North Atlantic, which gave nearly one-half less than any other. The South Atlantic returns exhibit a remarkable prevalence of respiratory troubles; next in order stands the European, and the Asiatic closes up this class with the smallest figures. Under the head of digestive diseases, the South Atlantic, as in the former class, has the lead by a large excess, while the Pacific returns show the smallest figures. The North Atlantic and European stations are also largely represented in these figures.

In the class of genito-urinary affections the returns of the European station, as last year, give the largest yield, and the North Atlantic station the smallest. The same remark applies also to disorders of the integumentary system.

Diseases falling in the class of poisons, including alcoholic abuses, were more notably observed on the South Atlantic and European stations. For the South Atlantic station is tabulated an enormous increase over all the other stations of violent diseases, injuries, &c.

In the following table these facts will be found fully shown:

Classes of disease and injury.	North Atlantic.	South Atlantic.	Pacific.	European.	Asiatic.	Special service.
Zymotic diseases	105.05	131.57	117.44	141.96	74.44	258.53
Constitutional diseases	113.45	187.96	159.90	101.78	99.26	239.02
Diseases of the nervous system	46.06	80.82	49.67	67.85	35.84	34.14
Diseases of the eye	17.69	26.31	17.56	11.60	17.46	9.75
Diseases of the ear	4.76	5.63	8.47	3.57	2.75	14 63
Diseases of the teeth	2.95	11.27	1.81	4.46	4.59	4.88
Diseases of the circulatory system	7.71	3.75	10.29	6.25	16.53	19.51
Diseases of the absorbent system	9.74	18.79	15.74	19.64	18.38	4.88
Diseases of the respiratory system	115 94	235.95	135.67	199.28	52.38	121.90
Diseases of the digestive system	228.48	321.31	149.00	242.85	204.04	236.58
Diseases of the genito-urinary system	46 96	93.98	49.67	97.32	68.93	190.24
Diseases of the locomotive system	2.04	3.75	4.23	.89	6.43	9.75
Diseases of the integumentary system	94.61	133.45	106.60	145.53	93.74	131.70
Non-malignant tumors and cysts	.68	.....	1.22	3.57	3.67	.....
Poisons	19.05	35.71	23.01	30.35	21.13	29.26
Violent diseases and deaths	175.62	405.99	192.00	229.46	165.43	287.80
Total	990.87	1,695.39	1,042.39	1,296.42	885.11	1,692.68

GENERAL DISEASES.

Of the various affections that occur among sailors, those grouped in the class of general diseases constitute something over a third of the total number, 239.64 per M against 843.80 per M for the local diseases. Last year zymotic affections exceeded, considerably, the constitutional, while in the present year the reverse is the case.

ZYMOTIC DISEASES.

There were reported 1,020 cases, a ratio of 113.32 per M, which is a decrease of more than 60 per M from last year. These affections were reported as follows: Catarrhus epidemicus, 7; cynanche parotidea, 1; denguis, 7; diphtheria, 2; erysipelas, 14; febricula, 24; febris continua simplex, 148; febris flava, 25; febris enterica, 9; febris intermittens, 622; febris remittens, 99; morbilli, 4; perlussis, 2; roseola, 5; scarlatina, 5; vaccina, 39; varicella, 1; variola, 1; varioloides, 5.

Catarrhus epidemicus.—This disease occurred only in seven cases in ships lying in port, and was far less frequent than in the previous year. It caused no other ill result than the loss of a few days in time.

Cynanche parotidea.—There was a single case of this disease, which quickly recovered.

Denguis.—There were seven cases of denguis, which quickly recovered; they occurred on vessels cruising in the Gulf of Mexico.

Diphtheria.—Two cases of a mild type of this disease were recorded, which were speedily recovered from without evil consequences.

Erysipelas.—This disease, which usually furnishes an annual contingent of from 2 to 3 per M, gave, during the year, 14 cases, or 1.55 per M. Ten were invalided to hospital, while the remainder recovered on the vessels and were restored to duty.

Febricula.—A larger number of cases occurred this year than last, and one was sent to hospital; the others ran a short course and recovered.

Febris continua simplex.—This disease furnished 148 cases, a ratio of 16.44 per M, a marked increase over last year. They ran a short course however, an average of 4.66 days, and were restored to health on shipboard, with the exception of one invalided from service, one invalided to hospital, and three continued.

Yellow fever.—This formidable disease was comparatively rife, 25 cases being reported, a ratio of 2.77 per M, of which all but three recovered. The average number of days under treatment was 13.4.

Febris enterica.—There were 9 cases returned, of which 3 recovered, 4 were invalided to hospital, and 2 died. The average duration of treatment was 20.11 days.

Febris intermittens.—There were 1,022 cases recorded as against 929 last year, a ratio of 69.1 per M, being a decrease of 35.67 per M. Twenty-three were invalided to hospital, 3 from service, and 3 continued to the next year; the remainder recovered after an average treatment of 5.40 days.

Febris remittens.—Of this disease 99 cases, or a ratio of 10.99, occurred, a decrease of more than a third from the past year. Ten were invalided to hospital, and one continued. The duration of treatment was 7.33 days.

Morbilli.—Four cases were reported as against 20 last year; one was sent to hospital, while the remainder recovered after an average duration of treatment of 16.5 days.

Pertussis.—Two cases occurred and both were sent to hospital.

Roseola.—The 5 cases returned recovered speedily.

Table showing the number and causes of rejection of all persons examined, &c.—Continued.

Causes of rejection.	Over 21 years of age.	Twenty-one years of age and under.	Total.
	Men.	Boys.	
IX.—Diseases of the respiratory system—Continued.			
Deficient size of chest	32	13	45
Phthisis		10	10
Pulmonary predisposition		29	29
Total	55	81	136
X.—Diseases of digestive system.			
Ascites	1		1
Dentium morbi	25	157	182
Dyspepsia	1		1
Fistula in ano	3	2	5
Hernia	55	30	85
Hæmorrhoides	51	8	59
Hypertrophy of liver		1	1
Hepatitis	1		1
Icterus	1		1
Pharyngitis	1	1	2
Tonsilitis	5	46	51
Spleen displacement	1		1
Total	145	245	390
XI.—Diseases of the genito-urinary system.			
Albuminuria	1		1
Atrophy of testicle		1	1
Cryptorchis	2	3	5
Chancroides	3	5	8
Enuresis		11	11
Gonorrhœa	34	23	57
Hydrocele		5	5
Masturbatio		2	2
Orchitis	3	5	8
Phymosis	7	17	24
Varicocele	60	92	152
Total	110	164	274
XII.—Diseases of the organs of locomotion.			
Ankylosis	4	2	6
Spinal curvature	1	11	12
Total	5	13	18
XIII.—Diseases of the cutaneous system.			
Bunion		2	2
Cicatrix	2	4	6
Eruptions on skin		18	18
Eczema		4	4
Herpes	1	1	2
Onychia		1	1
Pediculi		2	2
Pernio	1	1	2
Scabies	1		1
Ulcus	6	7	13
Unguis involutis	1	6	7
Total	12	46	58
XIV.—Wounds and injuries.			
Abrasio penis		1	1
Contusio	1		1
Dislocatio	1		1
Fractura	1	6	7
Gunshot wound, left eye		1	1
Stremma		1	1
Subluxatio, left shoulder	1		1
Wound on thigh		1	1
Total	4	10	14

Table showing the number and causes of rejection of all persons examined, &c.—Continued.

Causes of rejection.	Over 21 years of age.	Twenty-one years of age and under.	Total.
	Men.	Boys.	
XV.—MALFORMATIONS, DEFORMITIES, AND DEFICIENCIES.			
Atrophy of right leg	.....	1	1
Deformity of arm	1	.....	1
Deformity of hand	1	7	8
Deformity of palate	.....	1	1
Deformity of thorax	.....	1	1
Deformity of sternum	1	.....	1
Enlarged scrotum and penis	1	.....	1
Loss of fingers	1	.....	1
Other defects	1	24	.....
Stammering	1	4	5
Puberty, signs of absent	.....	1	1
Under all measurements	.....	43	43
Under weight and height	.....	42	42
Under height	12	87	99
Under weight	2	23	25
Total	21	234	255
XVI.—TUMORS.			
Lipoma	1	.....	1
Tumor	4	1	5
Tumor scroti	1	.....	1
Total	6	1	7
Total number examined	4,251	3,008	7,259
Total number rejected	849	1,195	2,044

ENTIRE FORCE.

There were admitted during the year from the entire force, including the cases remaining over from the preceding year (amounting to 464), 13,387 cases, of which 11,485 were discharged recovered, 111 died, 990 invalided to hospital, 321 invalided from service, and 480 continued to the succeeding year. The total loss of time to the service by disease and injury amounted to 179,435 days, giving a daily average sick-list of 491.6. The average duration of treatment was 13.4 days.

In comparison with the previous year these figures show a marked decrease in the admission and invaliding rate, but a slight increase in the death-rate, due principally to epidemic yellow fever on board the United States steamer Marion. These facts are fully set forth in the annexed table:

	Remaining from last year.	Admitted. First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
Force afloat	215	2,582	2,174	2,428	2,353	9,752
Naval hospitals	221	253	271	234	257	1,236
Naval stations	28	541	584	448	798	2,399
	464	3,376	3,029	3,110	3,408	13,387

Apoplexia.—There were reported 4 cases, of which 3 died and 1 was invalided to hospital. This is a slight increase over the past year.

Cephalalgia.—This group furnished the second largest figure in the class, 16.88 per M, of which 3 were sent to hospital. This disease is principally due to irritation of the digestive organs and imperfect ventilation. There is a slight increase over the preceding year.

Dementia.—There were 8 cases returned: all were sent to hospital except 1, which recovered on shipboard. There were a third less cases than in the past year.

Epilepsia.—This year the record only furnishes 2.88 per M. against 5.41 per M of last year, of which .88 per M were sent to hospital and .33 per M invalided from service: a large decrease from previous year.

Insolatio.—There were 15 cases recorded, of which 2 were sent to hospital. There were double the number of cases this year over last.

Melancholia.—Of the 8 cases returned, 6 were sent to hospital for treatment: a less number than the previous year.

Nausea marina.—Exactly the same number of cases were returned this year as last, and 1 was so severe as to require hospital treatment.

Neuralgia.—This is the most frequent disease of this class occurring among sailors: 147 cases were reported, a ratio of 17.44 per M, against 21.08 per M of last year. Eight were serious enough to require hospital treatment, and 1 was discharged from service.

Paralysis.—There were 10 cases of this disease, or 1.11 per M, of which 8 were invalided to hospital. This is a slight decrease from the previous year.

Pleurodynia.—Of the 19 cases returned, all recovered on shipboard except 1, which was sent to be hospital for treatment. This affection was one-half less frequent than last year.

Vertigo.—There were 12 cases recorded, one-half less than the previous year, one only being sent to hospital.

Diseases of the eye.—Of this group there were returned records of 155 cases, giving a ratio of 17.22 per M, a slight excess over the previous year. The average length of treatment was 12.77 days; 22 were sent to hospital, 2 invalided from the service, and 2 continued to next year. The most frequent diseases of this class were conjunctivitis and iritis.

Diseases of the ear.—There were 48 cases returned, a ratio of 5.33 per M: of these 9 were invalided and 1 died. The last was a case of otitis media with extension of the inflammation to the brain. The frequency of ear affections was a trifle less than last year.

Diseases of the teeth.—This class furnished 3.66 per M, a slight increase over last year: 1 case was sent to hospital.

Diseases of the circulatory system.—There were returned 82 cases, a ratio of 9.11 per M, a slight increase over the preceding year. Of these 3.66 per M, were invalided to hospital, 44 per M from the service, and 4 continued. The chief disease of this group was palpitatio, the others pericarditis, valvular disease, angina pectoris, and hypertrophy.

DISEASES OF THE ABSORBENT SYSTEM.

One hundred and twenty-two cases were recorded; with one exception all were of adenitis, giving a ratio of 13.15 per M, a little less than the past year. Of these 1.45 per M were invalided to hospital, .11 per M from service, and 2 continued.

DISEASES OF THE RESPIRATORY SYSTEM.

This furnishes one of the largest groups of diseases affecting the sailor. There were 1,154 cases reported, a ratio of 128.21 per M, of which 14.77

per M were invalided to hospital, and .88 per M from the service; .77 per M died and 38 continued, a considerable decrease from the previous year. The most common diseases were catarrh, bronchitis, pleuritis, and pneumonia.

DISEASES OF THE DIGESTIVE SYSTEM.

This class of diseases includes the most common disorders encountered on shipboard. The returns show 1,986 cases, a ratio of 220.64 per M, of which 7.44 per M were invalided to hospital, .55 per M from the service, .11 per M died, and 34 continued.

The average length of treatment was 5.02 days. There was a marked increase over last year in this class of affections. The most common of these diseases were diarrhœa, tonsillitis, and pharyngitis.

DISEASES OF THE GENITO-URINARY ORGANS.

There were 562 cases returned under this heading, giving a ratio of 62.43 per M, of which 7.55 per M were invalided to hospital, .44 per M from the service, and 20 continued. The average number of days under treatment was 15.09. These figures show a marked falling off from those of last year. The chief ailment coming under this head was gonorrhœa, which furnished nearly a third of the cases; next to this in frequency followed chancroid, orchitis, and strictura.

DISEASES OF THE LOCOMOTIVE SYSTEM.

These diseases, as indicated by the records, gave a ratio of 3.11 per M, a falling off of more than one-half from the previous year; .55 per M were invalided to hospital. The leading affections as reported were synovitis and periostitis.

DISEASES OF THE INTEGUMENTARY SYSTEM.

These diseases are exceedingly common among seafaring men of all nations. The returns show 106.21 per M, of which 2.11 per M were sent to hospital and .55 per M invalided from service. The average length of treatment was 8.32 days. This return exhibits figures slightly less than that of last year. The leading ailments were furunculus, abscessus, and ulcus.

NON-MALIGNANT TUMORS AND CYSTS.

This class is represented by a ratio of 1.44 per M, of which .22 per M were sent to hospital. This is less than one-half reported last year. The main factors were lipoma and adenoma.

POISONS.

In this group are found reported 207 cases; a ratio of 22.99 per M were invalided to hospital, and 2 cases continued to next year. There has been only a slight falling off in this class from last year, indicating that the intemperate use of alcoholic stimulants is steadily maintained in the Navy.

VIOLENT DISEASES AND DEATHS.

This class supplied the largest contingent of all, 200.00 per M, of which 9.33 per M were sent to hospital, .66 per M invalided from the service, 1.11 per M died, and 41 continued to the next year. These figures are less than those of last year, especially the invaliding rate The most frequent injuries were contusio, sprains, abrasio, abrasions and contused wounds.

Table showing the number of cases, the discharged to duty, the invalided, and the dead for each disease, with their ratio per thousand of the total force afloat.

Diseases and injuries.	Cases.		Number of sick days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Continued.
									To hospital.		From service.				
	Number.	Per 1,000 of force.		Absolute.	Per 1,000 of force.		Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	
GENERAL DISEASES.															
1.—*Zymotic diseases.*															
Catarrhus epidemicus	7	.77	61	.16	.01	8.71	7	.77							
Cynanche parotidea	1	.11	3			3	1	.11							
Denguis	7	.77	50	.13	.01	7.14	7	.77							
Diphtheria	2	.22	21	.05		10.50	2	.22							
Erysipelas	14	1.55	86	.23	.02	6.14	12	1.33	2	.22					
Febricula	24	2.66	107	.29	.03	4.45	23	2.55	1	.11					
Febris continua simplex	148	16.44	690	1.88	.20	4.66	143	12.88	1	.11	1	.11			3
Febris flava	25	2.77	335	.91	.10	13.40	22	2.44					3	.33	
Febris enterica	9	.99	181	.49	.05	20.11	3	.33	4	.44			2	.22	
Febris intermittens	622	69.10	3,360	9.18	1.01	5.40	593	65.88	23	2.55	3	.33			3
Febris remittens	99	10.99	726	1.98	.20	7.33	88	9.77	10	1.11					1
Morbilli	4	.44	66	.18	.01	16.50	3	.33	1	.11					
Pertussis	2	.22	7	.01		3.50			2	.22					
Roseola	5	.55	15	.04		3	5	.55							
Scarlatina	5	.55	20	.05		4	1	.11	4	.44					
Vaccina	39	4.33	189	.51	.05	2.79	37	4.11							2
Varicella	1	.11	1	.11	.01	1			1	.11					
Variola	1	.11	1	.11	.01	1			1	.11					
Varioloides	5	.55	25	.06		5	1	.11	4	.44					
Total	1,020	113.32	5,944	16.24	1.80	5.82	948	105.32	54	5.99	4	.44	5	.55	9
2.—*Constitutional diseases.*															
Adynamia	103	11.44	1,729	4.72	.52	16.78	60	6.66	37	4.11	2	.22			4
Anæmia	3	.33	15	.04		5	2	.22	1	.11					
Atrophia	1	.11	3			3			1	.11					
Carcinoma	2	.22	2			1			2	.22					
Diabetes	3	.33	123	.33	.03	41	1	.11	2	.22					
Hydrops	6	.66	52	.14	.01	8.66	5	.55							1

Lumbago	20	2.22	117	.32	.03	5.85	20	2.22							
Podagra	19	2.11	95	.25	.02	5	18	1.99	1	.11					
Rheumatismus acutus	239	26.50	2,422	6.61	.73	10.13	210	23.33	21	2.33					8
Rheumatismus chronicus	297	32.99	2,512	6.86	.76	8.45	250	27.77	39	4.33	1	.11			7
Rheumatismus subacutus	26	2.88	240	.65	.07	9.23	17	1.88	8	.88	1	.11			
Sciatica	5	.55	62	.16	.01	12.40	4	.44	1	.11					
Scrofula	1	.11	13	.03		13	1	.11							
Senectus	3	.33	31	.08		10.33			3	.33					
Syphilis primitiva	196	21.77	3,884	10.62	1.17	19.81	161	17.88	27	2.99	1	.11			7
Syphilis consecutiva	207	22.99	3,162	8.63	.95	15.27	153	16.99	46	5.11	1	.11			7
Torticollis	2	.22	13	.03		6.50	2	.22							
Tuberculosis	4	.44	84	.22	.02	21			3	33			1	.11	
Total	1,137	126.32	14,559	39.77	4.41	12.87	904	100.43	192	21.33	6	.66	1	.11	34
LOCAL DISEASES.															
1.—Diseases of the nervous system.															
Apoplexia	4	.44	8	.02		2	1	.11					3	.33	
Asthenia	1	.11	1			1	1	.11							
Cephalagia	152	16.88	450	1.22	.13	2.96	149	16.55	3	.33					
Cerebri congestio	1	.11	146	.39	.04	146			1	.11					
Dementia	8	.88	158	.43	.04	19.75	1	.11	7	.77					
Epilepsia	26	2.88	402	1.09	.12	15.46	15	1.66	8	.88	3	.33			
Insolatio	15	1.66	82	.22	.02	5.46	13	1.44	2	.22					
Irritatio spinalis	1	.11	10	.02		10			1	.11					
Melancholia	8	.88	232	.63	.06	29	2	.22	6	.66					
Meningitis	1	.11	10	.02		10	1	.11							
Monomania	2	.22	41	.11	.01	20.50	1	.11	1	.11					
Nausea marina	28	3.11	76	.20	.02	2.71	27	2.99	1	.11					
Neuralgia	157	17.44	1,032	2.81	.31	7.50	148	16.55	8	.88	1	.11			
Neurasthenia	1	.11	1			1			1	.11					
Nostalgia	1	.11	2			2	1	.11							
Paralysis	10	1.11	199	.54	.05	19	2	.22	8	.88					
Pleurodynia	19	2.11	92	.25	.02	4.84	18	1.99	1	.11					
Tetanus	1	.11	62	.16	.01	62			1	.11					
Vertigo	12	1.33	75	.20	.02	6.25	11	1.22	1	.11					
Total	448	49.77	3,079	8.95	.99	6.87	391	43.44	50	5.55	4	.44	3	.33	
2.—Diseases of the eye.															
Amaurosis	2	.22	11	.03		5.5			1	.11	1	.11			
Asthenopia	1	.11	35	.09		35	1	.11							
Cataracta	1	.11	13	.03		13	1	.11							
Conjunctivitis	96	10.66	900	2.45	.27	9.37	85	9.44	10	1.11					1
Hemeralopia	1	.11	2			2			1	.11					
Hordeolum	6	.66	21	.05		3.5	6	.66							
Iritis	12	1.33	217	.59	.06	18.08	10	1.11	2	.22					
Keratitis	4	.44	56	.15	.01	14	3	.33							1

Table showing the number of cases, the discharged to duty, the invalided, and the dead for each disease, &c.—Continued.

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Continued.
									To hospital.		From service.				
	Number.	Per 1,000 of force.		Absolute.	Per 1,000 of force.		Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	
Myopia	1	.11	27	.07	.....	27	.....	.....	1	.11	.....	.....	.....	.....	.....
Ophthalmia	14	1.55	120	.32	.03	8.57	12	1.33	2	.22	.....	.....	.....	.....	.....
Ophthalmia gonorrhöica	3	.33	11	.03	.....	3.66	1	.11	2	.22	.....	.....	.....	.....	.....
Ophthalmia tarsi	2	.22	86	.23	.02	43	1	.11	1	.11	.....	.....	.....	.....	.....
Pterygium	1	.11	1	.....	.....	1	.....	.....	1	.11	.....	.....	.....	.....	.....
Retinitis	3	.33	238	.65	.07	79.33	2	.22	1	.11	.....	.....	.....	.....	.....
Retinæ congestio	3	.33	153	.41	.04	51	3	.33	.....	.....	.....	.....	.....	.....	.....
Schlerotitis	2	.22	37	10	.01	18.5	2	.22	.....	.....	.....	.....	.....	.....	.....
Ulcus cornea	3	.33	83	.22	.02	27.66	2	.22	.....	.....	1	.11	.....	.....	.....
Total	155	17.22	2,011	5.49	.60	12.97	129	14.33	22	2.44	2	.22	.....	.....	2
3.—*Diseases of the ear.*															
Otalgia	6	.66	21	.05	.....	3.5	6	.66	.....	.....	.....	.....	.....	.....	.....
Otitis	27	2.99	161	.43	.04	5.96	22	2.44	4	.44	.....	.....	1	.11	.....
Otorrhœa	8	.88	40	.10	.01	5	8	.88	.....	.....	.....	.....	.....	.....	.....
Surditis	7	.77	53	.14	.01	7.57	2	.22	5	.55	.....	.....	.....	.....	.....
Total	48	5.33	275	.75	.08	5.72	38	4.22	9	.99	.....	.....	1	.11	.....
4. *Diseases of the teeth.*															
Odontalgia	30	3.33	62	.16	.01	2.03	29	3.22	1	.11	.....	.....	.....	.....	.....
Parulis	3	.33	31	.08	.....	10.33	3	.33	.....	.....	.....	.....	.....	.....	.....
Total	33	3.66	93	.25	.02	2.81	32	3.55	1	.11	.....	.....	.....	.....	.....
5.—*Diseases of the circulatory system.*															
Aneurysma	1	.11	24	.06	.....	24	.....	.....	1	.11	.....	.....	.....	.....	.....
Angina pectoris	7	.77	68	.18	.01	9.71	5	.55	2	.22	.....	.....	.....	.....	.....
Hypertrophia cordis	7	.77	107	.20	.03	15.28	2	.22	5	.55	.....	.....	.....	.....	.....
Morbi valvularum cordis	9	.99	256	.69	.07	28.44	2	.22	6	.66	.....	.....	.....	.....	1
Palpitatio	39	.....	523	1.42	.15	13.41	20	2.22	13	1.44	3	.33	.....	.....	3
Pericarditis	5	.55	115	.31	.03	23	1	.11	3	.33	1	.11	.....	.....	.....

Syncope	8	.88	35	.09	.....	4.37	8	.88	.....	.....	.....	.....	.....	.....	.....
Varix	6	.66	19	.05	.....	3.16	3	.33	3	.33	.....	.....	.....	.....	.....
Total	82	9.11	1,147	3.13	.34	13.98	41	5.55	33	3.66	4	.44	.....	.....	4
6.—Diseases of the absorbent system.															
Adenitis	121	13.44	2,214	6.04	.67	18.29	105	11.66	13	1.44	1	.11	.....	.....	2
Lymphangitis	1	.11	9	.02	.....	9	1	.11	.....	.....	.....	.....	.....	.....	.....
Total	122	13.55	2,223	6.06	.67	18.22	106	11.77	13	1.44	1	.11	.....	.....	2
7.—Diseases of the respiratory system.															
Asphyxia	1	.11	1	.....	.....	1	1	.11	.....	.....	.....	.....	.....	.....	.....
Asthma	18	1.99	352	.96	.10	19.55	11	1.22	7	.77	.....	.....	.....	.....	.....
Bronchitis acuta	273	30.33	2,222	6.07	.67	8.13	239	26.55	22	2.44	2	.22	.....	.....	10
Bronchitis chronica	55	6.11	1,013	2.76	.30	18.41	28	3.11	24	2.66	1	.11	.....	.....	2
Catarrhus	548	60.88	2,395	6.54	.72	4.37	527	58.54	1	.11	.....	.....	.....	.....	20
Catarrhus bronchialis	52	5.77	330	.90	.09	6.34	48	5.33	4	.44	.....	.....	.....	.....	.....
Congestio pulmonalis	2	.22	14	.03	.....	7	1	.11	.....	.....	.....	.....	1	.11	.....
Hæmoptysis	17	1.88	155	.42	.04	9.11	6	.66	10	1.11	.....	.....	1	.11	.....
Laryngitis	31	3.44	167	.45	.04	5.38	30	3.33	1	.11	.....	.....	.....	.....	.....
Phthisis pneumonica acuta	11	1.22	112	.30	.03	10.18	1	.11	10	1.11	.....	.....	.....	.....	.....
Phthisis pneumonica chronica	38	4.22	1,059	2.89	.32	27.86	6	.66	29	3.22	1	.11	1	.11	1
Pleuritis	61	6.77	992	2.71	.30	16.26	40	4.44	15	1.66	2	.22	.....	.....	4
Pneumonia	47	5.22	1,150	3.14	.34	24.44	30	3.33	10	1.11	2	.22	4	.44	1
Total	1,154	128.21	9,962	27.21	3.02	8.63	968	107.54	133	14.77	8	.88	7	.77	38
8.—Diseases of the digestive system.															
Ascites	1	.11	19	.05	.....	19	.....	.....	1	.11	.....	.....	.....	.....	.....
Cholera morbus	187	20.77	545	1.48	.16	2.91	187	20.77	.....	.....	.....	.....	.....	.....	.....
Cirrhosis hepatis	1	.11	47	.12	.01	47	.....	.....	1	.11	.....	.....	.....	.....	.....
Colica	150	16.66	461	1.25	.13	3.07	147	16.33	2	.22	.....	.....	.....	.....	1
Congestio hepatis	4	.44	28	.07	.....	7	3	.33	.....	.....	1	.11	.....	.....	.....
Constipatio	57	6.33	159	.43	.04	2.78	56	6.22	1	.11	.....	.....	.....	.....	.....
Diarrhœa acuta	663	73.65	2,691	7.35	.81	4.51	649	72.10	5	.55	1	.11	.....	.....	8
Diarrhœa chronica	17	1.88	142	.38	.04	8.35	12	1.33	4	.44	.....	.....	.....	.....	1
Dysenteria acuta	86	9.55	690	1.88	.20	8.02	77	8.58	6	.66	.....	.....	.....	.....	3
Dysenteria chronica	7	.77	158	.43	.04	22.57	5	.55	2	.22	.....	.....	.....	.....	.....
Dyspepsia	70	7.77	397	1.08	.11	5.67	63	6.99	6	.66	.....	.....	.....	.....	1
Emesis	1	.11	2	.....	.....	2	1	.11	.....	.....	.....	.....	.....	.....	.....
Enteritis	4	.44	48	.13	.01	12	3	.33	1	.11	.....	.....	.....	.....	.....
Fauces ulcerosa	4	.44	24	.06	.....	6	3	.33	.....	.....	.....	.....	.....	.....	1
Fistula in ano	7	.77	150	.40	.04	21.42	3	.33	3	.33	1	.11	.....	.....	.....
Gastritis	12	1.33	61	.16	.01	5.08	11	1.22	1	.11	.....	.....	.....	.....	.....
Gastrodynia	3	.33	12	.03	.....	4	3	.33	.....	.....	.....	.....	.....	.....	.....
Hæmatemesis	1	.11	1	.....	.....	1	1	.11	.....	.....	.....	.....	.....	.....	.....
Hæmorrhöis	67	7.44	597	1.63	.18	8.91	54	5.99	12	1.33	.....	.....	.....	.....	1
Hepatitis acuta	9	.99	119	.32	.03	13.22	7	.77	1	.11	.....	.....	.....	.....	1
Hepatitis chronica	1	.11	6	.01	.....	6	.....	.....	1	.11	.....	.....	.....	.....	.....

Table showing the number of cases, the discharged to duty, the invalided, and the dead for each disease, &c.—Continued.

Diseases and injuries.	Cases. Number.	Cases. Per 1,000 of force.	Number of sick-days.	Average number of men sick daily. Absolute.	Average number of men sick daily. Per 1,000 of force.	Average number of days under treatment.	Discharged to duty. Number.	Discharged to duty. Per 1,000 of force.	Invalided. To hospital. Number.	Invalided. To hospital. Per 1,000 of force.	Invalided. From service. Number.	Invalided. From service. Per 1,000 of force.	Died. Number.	Died. Per 1,000 of force.	Continued.
Hernia	36	2.88	295	.80	.08	11.34	18	1.99	6	.66	1	.11	1	.11	.....
Icterus	36	2.99	348	.95	.10	9.66	32	3.55	4	.44	.....	.....	.....	.....	.....
Œsophagi strictura	3	.33	14	.03	.....	4.66	3	.33	.....	.....	.....	.....	.....	.....	.....
Perityphlitis	1	.11	11	.03	.....	11	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pharyngitis	202	22.44	1,036	2.88	.31	5.26	195	21.66	2	.22	1	.11	.....	.....	5
Rhagades ani	2	.22	8	.02	.....	4	2	.22	.....	.....	.....	.....	.....	.....	.....
Splenitis	2	.22	16	.04	.....	8	2	.22	.....	.....	.....	.....	.....	.....	.....
Stomatitis	6	.66	27	.07	.....	4.5	6	.66	.....	.....	.....	.....	.....	.....	.....
Tænia	2	.22	4	.01	.....	2	2	.22	.....	.....	.....	.....	.....	.....	.....
Tonsillitis	340	37.77	1,783	4.84	.53	5.22	319	35.44	8	.88	.....	.....	.....	.....	13
Vermes	14	1.55	60	.16	.01	4.28	14	1.55	.....	.....	.....	.....	.....	.....	.....
Total	1,986	220.64	9,980	27.26	3.02	5.02	1,878	208.59	67	7.44	5	.55	1	.11	35
9.—*Diseases of the genito-urinary system.*															
Albuminuria	5	.55	56	.15	.01	11.2	1	.11	4	.44	.....	.....	.....	.....	.....
Balanitis	12	1.33	208	.56	.06	1.73	12	1.33	.....	.....	.....	.....	.....	.....	.....
Calculus	2	.22	30	.08	.....	15	2	.22	.....	.....	.....	.....	.....	.....	.....
Chancroides	72	7.99	1,233	3.36	.37	17.12	64	7.11	1	.11	.....	.....	.....	.....	7
Cystitis	30	3.33	449	1.22	.12	14.96	26	2.88	3	.33	.....	.....	.....	.....	1
Dysuria	1	.11	4	.01	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	1
Enurosis	18	1.99	70	.19	.02	3.88	6	.66	12	1.33	.....	.....	.....	.....	.....
Epididymitis	10	1.11	156	.42	.04	15.6	9	.99	1	.11	.....	.....	.....	.....	.....
Gonorrhœa	212	23.55	3,738	12.67	1.40	17.63	184	20.44	20	2.22	1	.11	.....	.....	7
Hæmaturia	6	.66	101	.27	.02	16.83	4	.44	2	.22	.....	.....	.....	.....	.....
Hydrocele	5	.55	50	.13	.01	10	4	.44	1	.11	.....	.....	.....	.....	.....
Nephritis	5	.55	35	.09	.....	7	3	.33	2	.22	.....	.....	.....	.....	.....
Orchitis	130	14.44	1,577	4.30	.04	12.13	124	13.77	3	.33	.....	.....	.....	.....	3
Paraphymosis	3	.33	44	.12	.01	14.66	2	.22	1	.11	.....	.....	.....	.....	.....
Phymosis	9	.99	248	.67	.07	27.55	7	.77	1	.11	1	.11	.....	.....	.....
Spermatorrhœa	5	.55	36	.09	.....	7.2	3	.33	2	.22	.....	.....	.....	.....	.....
Urethræ strictura	34	3.77	516	1.40	.15	15.17	17	1.88	14	1.55	2	.22	.....	.....	.....

Varicocele	3	.33	32	.08	.....	10.66	2	.22	1	.11	.....	.....	.....	.....	.....
Total	562	62.43	8,583	23.45	2.60	15.09	470	52.21	68	7.55	4	.44	.....	.....	2
10.—Diseases of the locomotive system.															
Arthritis	3	.33	28	.07	.....	9.33	3	.33	.....	.....	.....	.....	.....	.....	.....
Bunion	1	.11	3	.....	.....	3	1	.11	.....	.....	.....	.....	.....	.....	.....
Bursitis	2	.22	14	.03	.....	7	2	.22	.....	.....	.....	.....	.....	.....	.....
Caries	1	.11	5	.01	.....	5	1	.11	.....	.....	.....	.....	.....	.....	.....
Hydrops articulorum	3	.33	51	.13	.01	17	3	.33	.....	.....	.....	.....	.....	.....	.....
Necrosis	1	.11	71	.19	.01	71	.....	.....	1	.11	.....	.....	.....	.....	.....
Otitis	1	.11	6	.01	.....	6	.....	.....	1	.11	.....	.....	.....	.....	.....
Periostitis	6	.66	40	.13	.01	8.16	5	.55	1	.11	.....	.....	.....	.....	.....
Synovitis	10	1.11	146	.39	.04	14.6	8	.88	2	.22	.....	.....	.....	.....	.....
Total	28	3.11	373	1.01	.11	13.32	23	2.55	5	.55	.....	.....	.....	.....	.....
11.—Diseases of the integumentary system.															
Abscesses	246	27.33	2,318	6.33	.70	9.42	230	26.21	8	.88	1	11	....	.....	1
Acne	11	1.22	60	.16	.01	5.45	11	1.22	.....	.....	.....	.....	.....	.....	.....
Anthrax	16	1.77	185	.50	.05	11.56	16	1.77	.....	.....	.....	.....	.....	.....	.....
Callositas	1	.11	4	.01	.....	4	1	.11	.....	.....	.....	.....	.....	.....	.....
Cellulitis	7	.77	38	.10	.01	5.42	6	.66	.....	.....	1	11	.....	.....	.....
Dermatitis	1	.11	2	.....	.....	2	1	.11	.....	.....	.....	.....	.....	.....	.....
Ecthyma	6	.66	38	.10	.01	6.33	6	.66	.....	.....	.....	.....	.....	.....	.....
Eczema	38	4.22	547	1.49	.16	14.39	30	3.33	6	.66	1	.11	.....	.....	1
Epithelioma	1	.11	11	.02	.....	11	.....	.....	.....	.....	1	.11	.....	.....	.....
Erythema	14	1.55	50	.13	.01	3.55	14	1.55	.....	.....	.....	.....	.....	.....	.....
Furunculus	387	42.99	2,252	6.14	.68	5.84	377	41.88	1	.11	1	.11	.....	.....	8
Herpes	16	1.77	140	.38	.04	8.75	15	1.66	1	.11	.....	.....	.....	.....	.....
Impetigo	3	.33	22	.06	.....	7.4	3	.33	.....	.....	.....	.....	.....	.....	.....
Lichen	2	.22	86	.23	.02	33	2	.22	.....	.....	.....	.....	.....	.....	.....
Onychia	9	.99	40	.10	.01	4.44	8	.88	.....	.....	.....	.....	.....	.....	1
Paronychia	76	8.44	783	2.14	.23	10.3	75	8.33	.....	.....	.....	.....	.....	.....	1
Pernio	3	.33	88	.24	.02	29.33	3	.33	.....	.....	.....	.....	.....	.....	.....
Porrigo	1	.11	29	.07	.....	29	.....	.....	.....	.....	.....	.....	.....	.....	1
Psoriasis	5	.55	35	.09	.....	7	5	.55	.....	.....	.....	.....	.....	.....	.....
Purpura	2	.22	10	.02	.....	5	2	.22	.....	.....	.....	.....	.....	.....	.....
Rupia	4	.44	42	.11	.01	10.5	4	.44	.....	.....	.....	.....	.....	.....	.....
Scabies	2	.22	14	.03	.....	7	2	.22	.....	.....	.....	.....	.....	.....	.....
Tinea	12	1.33	79	.21	.02	6.58	11	1.22	.....	.....	.....	.....	.....	.....	1
Ulcus	78	8.66	986	2.69	.29	12.64	72	8.44	2	.22	.....	.....	.....	.....	4
Unguis involutis	7	.77	75	.20	.02	10.71	6	.66	1	.11	.....	.....	.....	.....	.....
Urticaria	7	.77	21	.05	.....	3	6	.66	.....	.....	.....	.....	.....	.....	1
Verrucæ	1	.11	7	.01	.....	7	1	.11	.....	.....	.....	.....	.....	.....	.....
Total	956	106.21	7,962	21.75	2.41	8.32	913	101.43	19	2.11	5	.55	.....	.....	19

Table showing the number of cases, the discharged to duty, the invalided, and the dead for each disease, &c.—Continued.

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		
									To hospital.		From service.				
	Number.	Per 1,000 of force.		Absolute.	Per 1,000 of force.		Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Continued.
NON-MALIGNANT TUMORS AND CYSTS.															
Adenoma	3	.33	44	.12	.01	14.66	3	.33	.....	.....	.....	.....	.....	.....	.....
Cystis	2	.22	13	.03	.....	6.5	2	.22	.....	.....	.....	.....	.....	.....	.....
Fibroma	1	.11	9	.02	.....	8	1	.11	.....	.....	.....	.....	.....	.....	.....
Hæmatoma	1	.11	15	.04	.....	15	1	.11	.....	.....	.....	.....	.....	.....	.....
Lipoma	4	.44	19	.05	.....	4.75	3	.33	1	.11	.....	.....	.....	.....	.....
Sarcoma	2	.22	24	.06	.....	12	1	.11	1	.11	.....	.....	.....	.....	.....
Total	13	1.44	123	.33	.03	9.46	11	1.22	2	.22	.....	.....	.....	.....	.....
POISONS.															
Alcoholismus	156	17.33	487	1.33	.14	3.12	151	16.77	4	.44	.....	.....	.....	.....	1
Colica pictonum	1	.11	2	.....	.....	2	1	.11	.....	.....	.....	.....	.....	.....	.....
Delirium tremens	8	.88	28	.07	.....	3.5	6	.66	2	.22	.....	.....	.....	.....	.....
Ebriositas	31	3.44	67	.18	.01	2.16	31	3.44	.....	.....	.....	.....	.....	.....	1
Venenatio	2	.22	10	.02	.....	5	2	.22	.....	.....	.....	.....	.....	.....	.....
Vulnus venenatum	9	.99	49	.13	.01	5.44	8	.88	.....	.....	.....	.....	.....	.....	.....
Total	207	22.99	643	1.75	.19	3.10	199	22.10	6	.66	.....	.....	.....	.....	2
VIOLENT DISEASES AND DEATHS.															
Abrasio	113	12.55	916	2.50	.20	8.10	112	12.44	1	.11	.....	.....	.....	.....	.....
Ambustio	81	8.99	650	1.77	.19	8.02	76	8.44	2	.22	.....	.....	.....	.....	3
Amputatio	2	.22	59	.16	.01	29.5	2	.22	.....	.....	.....	.....	.....	.....	.....
Concussio cerebri	7	.77	137	.37	.04	19.71	2	.22	3	.33	.....	.....	2	.22	.....
Congelatio	10	1.11	39	.10	.01	3.9	2	.22	.....	.....	.....	.....	.....	.....	8
Contusio	520	57.77	3,410	9.31	1.03	6.55	499	55.43	9	.99	2	.22	1	.11	9
Fractura	74	8.22	1,159	4.25	.47	21.06	36	3.99	35	3.88	.....	.....	1	.11	2
Fractura cranii et compressio cerebri	1	.11	1	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.11	.....
Luxatio	20	3.22	386	1.05	.11	13.31	22	2.44	7	.77	.....	.....	.....	.....	.....
Strenuna	372	41.32	3,022	8.25	.91	8.2	357	39.06	8	.88	2	22	.....	.....	5

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SANITARY INVESTIGATIONS.

Two years ago a small laboratory was established in Washington for the investigation of the causative relation of the atmosphere and its impurities to the origination and extension of disease. This work has steadily progressed, with the aid of a small appropriation made at the last session of Congress, and it is now the intention of the bureau to increase the usefulness of this institution by widening its scope of investigation to all matters connected with the prevention of disease and the maintenance of health. This important work involves the collection from various sources of instruments, appliances, inventions, and designs relating to, and illustrating the progress of sanitary science in its widest application to the exigencies of civil and military life. It is intended to invite the co-operation of all classes interested in sanitary reform, so as to secure contributions to the collection, which, in a few years, will thus afford the most ample material for the exemplification of the courses of lectures to be delivered upon sanitary science.

It will be seen from the following report of Surgeon J. H. Kidder that the labors of the laboratory have been pushed with commendable zeal and earnestness, and, it is hoped, not without promise to the cause of future scientific investigation. He says:

Agreeably to your instructions, observations of the chemical and microscopical constituents of the out-of-door air in the neighborhood of the laboratory have been carried on throughout the year. These observations will be the subject of a special report now in course of preparation.

The other work of the laboratory has consisted in chemical examinations of substances presented by the department; microscopical examination of pathological specimens; numerous photo-micrographs; examination and consolidation of the meteorological reports from ships and stations; special investigations undertaken by your order.

The *materiel* of the laboratory has been increased during the year by a small Carré ice-machine, a Browning's "Model" spectroscope, a Browning's small electric lamp with battery of 20-quart Bunsen cells, a large "College" lantern, for the exhibition of photographs upon a screen, and the usual replenishments of expended material.

The total number of chemical examinations for the year is 267, which may be classified as follows:

Atmospheric carbon dioxide, quantitative	99
Comparisons of different methods for estimating atmospheric carbon dioxide	26
Air (by atomization), partly quantitative	20
Air (by condensation), partly quantitative	3
Rain, partly quantitative	3
Snow, partly quantitative	2
Examinations of Nessler process (see Report on Air), quantitative	6
Examinations of photographic chemicals, qualitative	4
Examinations of laboratory supplies, qualitative	23
Urine, qualitative	19
Urine, quantitative	23
Potable water, quantitative	5
Urinary calculus, qualitative	1
Stomach for potassium cyanide, qualitative	1
Intestinal concretion, qualitative	1
Fluid extract of ergot, qualitative	1
Green soap, qualitative	2
Pills, for morphia, qualitative	1
Pills, for lead and strychnia, qualitative	1
Whisky and brandy, qualitative	3
Lime juice, qualitative	5
Fly paper, qualitative	1
American Wood Preserving Company's process, quantitative	2
American Wood Preserving Company's process, quantitative (by Dr. Flint)	6
Chrome ore, qualitative	2
Copper alloy (ship nails), quantitative	4
Scheme for examination of copper alloys from a single specimen, qualitative	1
Oak and pine sheathing, for agent protecting the same against teredo, qualitative	2

Of the 267 analyses, 172 were quantitative, 67 qualitative, and 28 partly quantitative.

One hundred and fifty microscopic specimens have been mounted and preserved, a list of which is herewith inclosed.

Besides those above noted, many specimens were examined which were not considered as worth preservation. A large proportion of those microscopic specimens mounted since September 15 have been prepared by Dr. Griffith. A list is also inclosed of 82 photo-micrographs, which are now available for distribution.

Meteorological returns from 21 ships have been examined and reduced to graphic form by Surgeon James M. Flint and Passed Assistant Surgeons H. G. Beyer and S. H. Griffith.

Special examinations have been made of the working and economic value on shipboard of the Carré ice-machine, of blood from several cases of beri-beri admitted into the New York naval hospital, and of the instruments received.

About 60 of the boxes containing sets of tubes and disks, described in my last annual report (see report of the Surgeon General of the Navy, 1879, p. 47) have been prepared and sent out. Only six have as yet been returned, of which four appear to have been prepared in accordance with the instructions. Examination of these four has not yet been completed, and will be made the subject of a special report. The offer made in your report for 1879 (p. 51), to send sets of the photographs therein referred to to those who should make application for them, has been extensively taken advantage of, and sets of the photographs distributed accordingly.

Surgeon Kidder represents that the operations of the laboratory would be materially facilitated by an increase of available space. There is especial need of a separate weighing room, the valuable balance now in use being in constant danger from the corrosive vapors often present in the laboratory, and of another room for instruments of special application, such as the spectroscope, lantern, and electrical apparatus.

The following is the special report of Surgeon Kidder, above referred to;

Air is supposed to modify the health of men and animals—

1st. By variations in the proportionate quantity of its *essential constituents*, viz, oxygen and nitrogen.

2d. By variations in the proportionate quantity of certain constituents which are *constant*, but not essential—aqueous vapor and carbon dioxide, for example.

3d. By containing extraneous substances, such as ammonia and other products of decomposition, nitrous and nitric acids, solids (mostly inorganic) dissolved in the aqueous vapor, and insoluble bodies drifted with the air as dust, including a multitude of organisms.

4th. By changes in its physical conditions of temperature and pressure.

Of the essential constituents of the air, *nitrogen* is inert, and need not be considered in this connection. *Oxygen*, the component of vital importance, does not, so far we know, modify health perceptibly within the limits of its observed variations. Mr. R. Angus Smith, after an elaborate comparison of several thousand analyses* concludes that a fair statement of the composition of pure outside air would be—

	Per cent
Oxygen	20.96
Nitrogen	79.00
Carbon dioxide	.04

The observed variations from these figures, whether the specimens examined were collected upon the mountains of Ecuador or in the suburbs of Manchester, have been found for the most part in the second place of decimals. And although the variations in the percentage of out-door oxygen are by no means always wholly accounted for by a corresponding excess of carbon dioxide, and it is quite conceivable those gases which, under certain circumstances, take the place of the missing oxygen may be of so hurtful a nature as to give an inferential significance to even very trifling diminutions in its quantity, chemical science is not yet competent to discriminate the hurtful from the harmless admixtures. In his well-known "lead-chamber" experiments, Mr. Angus Smith experienced no disagreeable sensation until the quantity of oxygen had fallen to 19.73 per cent. and that of carbon dioxide had risen to 1.13 per cent. It does not appear to me, moreover, that the resources of either the experimental laboratory or the present observer would be likely to add any facts of importance to the analysis cited by Mr. Smith, already referred to; and therefore no attempt has been made to estimate the percentage of oxygen in the air of Washington, which may be fairly assumed to be no exception in this respect to the rule which prevails in other parts of the world.

*Air and Rain: London, 1872, pp. 6–42.

Table showing the number of cases, the discharged to duty, the invalided, and the dead for each disease, &c.—Continued.

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		
									To hospital.		From service.				
	Number.	Per 1,000 of force.		Absolute.	Per 1,000 of force.		Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Continued.
Myopia	1	.11	27	.07	.....	27	.....	.....	1	.11	.....	.....	.....	.....	.....
Ophthalmia	14	1.55	120	.32	.03	8.57	12	1.33	2	.22	.....	.....	.....	.....	.....
Ophthalmia gonorrhœica	3	.33	11	.03	.....	3.66	1	.11	2	.22	.....	.....	.....	.....	.....
Ophthalmia tarsi	2	.22	86	.23	.02	43	1	.11	1	.11	.....	.....	.....	.....	.....
Pterygium	1	.11	1	.....	.....	1	.....	.....	1	.11	.....	.....	.....	.....	.....
Retinitis	3	.33	238	.65	.07	79.33	2	.22	1	.11	.....	.....	.....	.....	.....
Retinæ congestio	3	.33	153	.41	.04	51	3	.33	.....	.....	.....	.....	.....	.....	.....
Sclerotitis	2	.22	37	10	.01	18.5	2	.22	.....	.....	.....	.....	.....	.....	.....
Ulcus corneæ	3	.33	83	.22	.02	27.66	2	.22	.....	.....	1	.11	.....	.....	.....
Total	155	17.22	2,011	5.49	.60	12.97	129	14.33	22	2.44	2	.22	.....	.....	2
3.—Diseases of the ear.															
Otalgia	6	.66	21	.05	.....	3.5	6	.66	.....	.....	.....	.....	.....	.....	.....
Otitis	27	2.99	161	.43	.04	5.96	22	2.44	4	.44	.....	.....	1	.11	.....
Otorrhœa	8	.88	40	.10	.01	5	8	.88	.....	.....	.....	.....	.....	.....	.....
Surditis	7	.77	53	.14	.01	7.57	2	.22	5	.55	.....	.....	.....	.....	.....
Total	48	5.33	275	.75	.08	5.72	38	4.22	9	.99	.....	.....	1	.11	.....
4. Diseases of the teeth.															
Odontalgia	30	3.33	62	.16	.01	2.06	29	3.22	1	.11	.....	.....	.....	.....	.....
Parulis	3	.33	31	.08	.....	10.33	3	.33	.....	.....	.....	.....	.....	.....	.....
Total	33	3.66	93	.25	.02	2.81	32	3.55	1	.11	.....	.....	.....	.....	.....
5.—Diseases of the circulatory system.															
Aneurysma	1	.11	24	.06	.....	24	.....	.....	1	.11	.....	.....	.....	.....	.....
Angina pectoris	7	.77	68	.18	.01	9.71	5	.55	2	.22	.....	.....	.....	.....	.....
Hypertrophia cordis	7	.77	107	.20	.03	15.28	2	.22	5	.55	.....	.....	.....	.....	.....
Morbi valvularum cordis	9	.99	256	.69	.07	28.44	2	.22	6	.66	.....	.....	.....	.....	1
Palpitatio	39	.....	523	1.42	.15	13.41	20	2.22	13	1.44	3	.33	.....	.....	3
Pericarditis	5	.55	115	.31	.03	23	1	.11	3	.33	1	.11	.....	.....	.....

Syncope	8	.88	35	.09		4.37	8	.88							
Varix	6	.66	19	.05		3.16	3	.33	3	.33					
Total	82	9.11	1,147	3.13	.34	13.98	41	5.55	33	3.66	4	.44			4
6.—Diseases of the absorbent system.															
Adenitis	121	13.44	2,214	6.04	.67	18.29	105	11.66	13	1.44	1	.11			2
Lymphangitis	1	.11	9	.02		9	1	.11							
Total	122	13.55	2,223	6.06	.67	18.22	106	11.77	13	1.44	1	.11			2
7.—Diseases of the respiratory system.															
Asphyxia	1	.11	1			1	1	.11							
Asthma	18	1.99	352	.96	.10	19.55	11	1.22	7	.77					
Bronchitis acuta	273	30.33	2,222	6.07	.67	8.13	239	26.55	22	2.44	2	.22			10
Bronchitis chronica	55	6.11	1,013	2.76	.30	18.41	28	3.11	24	2.66	1	.11			2
Catarrhus	548	60.88	2,305	6.54	.72	4.37	527	58.54	1	.11					20
Catarrhus bronchialis	52	5.77	330	.90	.09	6.34	48	5.33	4	.44					
Congestio pulmonalis	2	.22	14	.03		7	1	.11					1	.11	
Hæmoptysis	17	1.88	155	.42	.04	9.11	6	.66	10	1.11			1	.11	
Laryngitis	31	3.44	167	.45	.04	5.38	30	3.33	1	.11					
Phthisis pneumonica acuta	11	1.22	112	.30	.03	10.18	1	.11	10	1.11					
Phthisis pneumonica chronica	38	4.22	1,059	2.89	.32	27.86	6	.66	29	3.22	1	.11	1	.11	1
Pleuritis	61	6.77	992	2.71	.30	16.26	40	4.44	15	1.66	2	.22			4
Pneumonia	47	5.22	1,150	3.14	.34	24.44	30	3.33	10	1.11	2	.22	4	.44	1
Total	1,154	128.21	9,962	27.21	3.02	8.63	968	107.54	133	14.77	8	.88	7	.77	38
8.—Diseases of the digestive system.															
Ascites	1	.11	19	.05		19			1	.11					
Cholera morbus	187	20.77	545	1.48	.16	2.91	187	20.77							
Cirrhosis hepatis	1	.11	47	.12	.01	47			1	.11					
Colica	150	16.66	461	1.25	.13	3.07	147	16.33	2	.22					1
Congestio hepatis	4	.44	28	.07		7	3	.33			1	.11			
Constipatio	57	6.33	159	.43	.04	2.78	56	6.22	1	.11					
Diarrhœa acuta	663	73.65	2,691	7.35	.81	4.51	649	72.10	5	.55	1	.11			8
Diarrhœa chronica	17	1.88	142	.38	.04	8.35	12	1.33	4	.44					1
Dysenteria acuta	86	9.55	690	1.88	.20	8.02	77	8.58	6	.66					3
Dysenteria chronica	7	.77	158	.43	.04	22.57	5	.55	2	.22					
Dyspepsia	70	7.77	397	1.08	.11	5.67	63	6.99	6	.66					1
Emesis	1	.11	2			2	1	.11							
Enteritis	4	.44	48	.13	.01	12	3	.33	1	.11					
Fauces ulcerosa	4	.44	24	.06		6	3	.33							1
Fistula in ano	7	.77	150	.40	.04	21.42	3	.33	3	.33	1	.11			
Gastritis	12	1.33	61	.16	.01	5.08	11	1.22	1	.11					
Gastrodynia	3	.33	12	.03		4	3	.33							
Hæmatemesis	1	.11	1			1	1	.11							
Hæmorrhois	67	7.44	597	1.63	.18	8.91	54	5.99	12	1.33					1
Hepatitis acuta	9	.99	119	.32	.03	13.22	7	.77	1	.11					1
Hepatitis chronica	1	.11	6	.01		6			1	.11					

discredit than to establish its value. The "lead-chamber" experiments of Mr. Angus Smith, already referred to (page 285), and the large quantities of carbon dioxide given off from coal, as shown by special observations made by order of the department in the United States ships Kearsarge, Trenton, Tennessee, Alliance, and Wyoming, considered in connection with the total want of relation between the quantity of this gas and the number of sick observed in all ships of the Navy of which the meteorological records had been examined for the year 1879, have led the Surgeon-General of the Navy to indorse the conclusion of Surgeon J. M. Flint, that "the amount of carbon dioxide, as recorded, seems to be no just measure of the condition of ventilation or of the respirability of the air."*

* Report of the Surgeon-General of the Navy, 1879, page 46; also, graphic consolidations of meteorological reports of the several ships during the same year, pages 57, 164, 188, 238, 276, and 306.

Report on the subject of organic matter in the air, by Prof. Ira Remsen, National Board of Health Bulletin, September 11, 1880, page 517.

This fact is also fully borne out by the investigation of Passed Assistant Surgeon S. H. Griffith, who says that "according to the reports from the Richmond, on board of which vessel are improved ventilating appliances, and where observations were carefully made under varying conditions, the average of thirty observations, taken when the ventilators were working, gives 1.297 parts of carbonic acid per thousand; the average of sixteen observations, taken when the ventilators were not working, gives 1.102 parts per thousand—a higher result when the ventilators were working.

That humidity has much to do with the amount of sickness seems to be shown. There are exceptions, where high relative humidity of the berth deck goes with a relatively small percentage of sick, as the Tennessee and Powhatan, and *vice versa* in the reports of the Ticonderoga and Minnesota; but there is a general correspondence between high humidity and large percentage of sick when the number sent to hospital is taken into account. In many of the exceptional cases there are evident reasons for the departure from what seems to be the rule, *e. g.*, the Ticonderoga, on a special cruise, with a crew enfeebled by exposure, along the African coast, where many of the men were attacked with fever: the Minnesota, with a crew composed mostly of boys, unaccustomed to the exposures, &c., incident to the service.

The following table shows the percentage of sick, number sent to hospital and invalided, and the relative humidity for twenty-one ships, arranged in order of humidities:

Ships.	Percentage sick.	To hospital and invalided.	Relative humidity.		Remarks.
			Berth deck.	Spar deck.	
Saint Louis	1.41	12	59.2	55.3	Receiving-ship, League Island.
Wabash*	.88	14	61.4	61.9	Receiving-ship, Boston.
Franklin	.52	20	62.8	66.2	Receiving-ship, Norfolk.
Minnesota	2.77	84	67.1	70.1	Training-ship.
Independence*	1.26	7	68.7	64.8	Receiving-ship, Mare Island.
Ticonderoga	5.42	24	69.1	70.3	Special service.
New Hampshire	1.17	2	70.9	74.6	Port Royal, training-ship.
Kearsarge	1.64	7	72.1	69.8	North Atlantic station.
Nipsic	2.89	1	73.5	70.9	European station.
Constitution	2.91	78	73.9	75.2	North Atlantic station.
Pensacola	2.98	54	73.9	77.5	Pacific station.
Saratoga	1.02	22	74.4	75.7	Training-ship.
Alaska	1.60	13	75.5	82.6	Pacific station.
Luckawanna	1.52	15	75.6	81.1	Do.
Marion	2.18	7	75.7	82.8	South Atlantic station.
Shenandoah	2.93	15	75.8	78.2	Do.
Richmond	1.43	15	77.2	82.8	Asiatic station.
Tennessee	1.24	15	81.0	68.1	North Atlantic station.
Wachusett	4.68	8	84.6	85.4	South Atlantic and Pacific station.
Powhatan	1.93	22	85.7	71.7	North Atlantic station.
Alliance	3.78	25	88.0	81.6	Do.

* Roofed over.

The largest percentage of sick was on the Ticonderoga, noted above; next is the Wachusett, with a relative humidity of 84.6 and 4.68 per cent. of sick. The Alliance, with the greatest humidity, 88, has 3.78 per cent. of sick (for 8 months), besides sending 25 to hospital."

Varicocele	3	.33	32	.08	.....	10.66	2	.22	1	.11	.....	.....	.....	.....	.....
Total	562	62.43	8,583	23.45	2.60	15.09	470	52.21	68	7.55	4	.44	.....	.....	2
10.—*Diseases of the locomotive system.*															
Arthritis	3	.33	28	.07	.....	9.33	3	.33	.....	.....	.....	.....	.....	.....	.....
Bunion	1	.11	3	.....	.....	3	1	.11	.....	.....	.....	.....	.....	.....	.....
Bursitis	2	.22	14	.03	.....	7	2	.22	.....	.....	.....	.....	.....	.....	.....
Caries	1	.11	5	.01	....	5	1	.11	.....	.....	.....	.....	.....	.....	.....
Hydrops articulorum	3	.33	51	.13	.01	17	3	.33	.....	.....	.....	.....	.....	.....	.....
Necrosis	1	.11	71	.19	.01	71	.....	.....	1	.11	.....	.....	.....	.....	.....
Ostitis	1	.11	6	.01	.....	6	.....	.....	1	.11	.....	.....	.....	.....	.....
Periostitis	6	.66	40	.13	.01	8.16	5	.55	1	.11	.....	.....	.....	.....	.....
Synovitis	10	1.11	146	.39	.04	14.6	8	.88	2	.22	.....	....	.....	.....	.....
Total	28	3.11	373	1.01	.11	13.32	23	2.55	5	.55	.....	.....	.....	.....	.....
11.—*Diseases of the integumentary system.*															
Abscesses	246	27.33	2,318	6.33	.70	9.42	230	26.21	8	.88	1	11	....	.....	1
Acne	11	1.22	60	.16	.01	5.45	11	1.22	.....	.....	.....	.....	.....	.....	.....
Anthrax	16	1.77	185	.50	.05	11.56	16	1.77	.....	.....	.....	.....	.....	.....	.....
Callositas	1	.11	4	.01	.....	4	1	.11	.....	.....	.....	.....	.....	.....	.....
Cellulitis	7	.77	38	.10	.01	5.42	6	.66	.....	.....	1	11	.....	.....	.....
Dermatitis	1	.11	2	.....	.....	2	1	.11	.....	.....	.....	.....	.....	.....	.....
Ecthyma	6	.66	38	.10	.01	6.33	6	.66	.....	.....	.....	.....	.....	.....	.....
Eczema	38	4.22	547	1.49	.16	14.39	30	3.33	6	.66	1	.11	.....	.....	1
Epithelioma	1	.11	11	.02	....	11	.....	.....	.....	.....	1	.11	.....	.....	.....
Erythema	14	1.55	50	.13	.01	3.55	14	1.55	.....	.....	.....	.....	.....	.....	.....
Furunculus	387	42.99	2,252	6.14	.68	5.84	377	41.88	1	.11	1	.11	.....	.....	8
Herpes	16	1.77	140	.38	.04	8.75	15	1.66	1	.11	.....	.....	.....	.....	.....
Impetigo	3	.33	22	.06	.....	7.4	3	.33	.....	.....	.....	.....	.....	.....	.....
Lichen	2	.22	86	.23	.02	33	2	.22	.....	.....	.....	.....	.....	.....	.....
Onychia	9	.99	40	.10	.01	4.44	8	.88	.....	.....	.....	.....	.....	.....	1
Paronychia	76	8.44	783	2.14	.23	10.3	75	8.33	.....	.....	.....	.....	.....	.....	1
Pernio	3	.33	88	.24	.02	29.33	3	.33	.....	.....	.....	.....	.....	.....	.....
Porrigo	1	.11	29	.07	.....	29	.....	.....	.....	.....	.....	.....	.....	.....	1
Psoriasis	5	.55	35	.09	.....	7	5	.55	.....	.....	.....	.....	.....	.....	.....
Purpura	2	.22	10	.02	.....	5	2	.22	.....	.....	.....	.....	.....	.....	.....
Rupia	4	.44	42	.11	.01	10.5	4	.44	.....	.....	.....	.....	.....	.....	.....
Scabies	2	.22	14	.03	.....	7	2	.22	.....	.....	.....	.....	.....	.....	.....
Tinea	12	1.33	79	.21	.02	6.58	11	1.22	.....	.....	.....	.....	.....	.....	1
Ulcus	78	8.66	986	2.69	.29	12.64	72	8.44	2	.22	.....	.....	.....	.....	4
Unguis involutis	7	.77	75	.20	.02	10.71	6	.66	1	.11	.....	.....	.....	.....	.....
Urticaria	7	.77	21	.05	.....	3	6	.66	.....	.....	.....	.....	.....	.....	1
Verrucæ	1	.11	7	.01	.....	7	1	.11	.....	.....	.....	.....	.....	.....	.....
Total	936	106.21	7,962	21.75	2.41	8.32	913	101.43	19	2.11	5	.55	.....	.....	19

TABLE II.—*Estimations of carbon dioxide in laboratory yard*—Continued.

Date.	Hour.	Temperature.	Relative humidity.	Wind.	Observer.	CO_2 parts per 1,000.	Remarks.
June	4 p. m.	82	76	NW.	Dr. Beyer	1.823	
	4 p. m.	71	74	E.	do	0.997	
	4.45 p. m.	75	69	E.	do	0.914	
	11 a. m.	66	80	E.	do	0.673	
	4 p. m.	69	77	E.	do	0.763	
	4.45 p. m.	72	82	E.	do	0.420	
	4 p. m.	70	83	E.	do	0.449	
	5 p. m.	82	85	W.	do	0.554	Cloudy.
	5 p. m.	70	85	E.	do	1.057	Do.
	4.30 p. m.	82	80	W.	do	0.400	Clear.
	5 p. m.	68	80	W.	do	0.628	Do.
	5 p. m.	74	74	E.	do	0.679	Do.
	5 p. m.	75	74	E.	do	0.320	Do.
	5 p. m.	83	60	W.	do	0.923	Do.
	4 p. m.	81	60	W.	do	0.461	Do.
	4 p. m.	79	63	W.	do	0.572	Do.
	5.30 p. m.	82	80	W.	do	0.507	Do.
	4 p. m.	80	65	W.	do	0.547	Do.
	10 p. m.	80	80	W.	do	0.571	Do.
	5 p. m.	85	77	W.	do	0.692	Do.
	7 p. m.	80	68	W.	do	1.249	Do.
	4 p. m.	74	70	W.	do	0.883	Do.
	11 p. m.	74	70	NE.	do	0.982	Do.
	5 p. m.	73	74	W.	do	0.881	Do.
	4 p. m.	76	78	NE.	do	0.686	Cloudy.
	5 p. m.	77	83	E.	do	0.686	Do.
	4 p. m.	79	82	W.	do	0.374	Rain.
	5 p. m.	86	67	S.	do	0.461	Clear.
	4.30 p. m.	85	82	W.	do	0.846	Rain.
	5 p. m.	85	70	W.	do	1.961	Cloudy.

AMMONIA.

The fact, first noted by Gay-Lussac, that all of the nitrogen of organic matters, when they are heated with caustic hydrates, appears as ammonia, has been the basis of most of the more recent estimations of organic matter in the air, the Nessler process being usually preferred for this purpose to that of Varentrapp and Will, on account of its greater delicacy. Granting the substantial trustworthiness of the Nessler process, at least for comparison of the relative contents in nitrogenous organic matters of different samples of air washings, a serious practical difficulty presents itself when attempts are made to get *all* of the nitrogenous matter in a measured sample of air into the washings. Aspiration of bubbles of air, through water, fails entirely, owing to the relatively large contents and small surface of the bubbles, which are but a short time in contact with the water through which aspiration is done. Mr. Angus Smith's method of repeated washings of successive bottles full of air with the same water requires, certainly, almost unlimited patience, "and it is very questionable," as Prof. Remsen remarks, "whether complete absorption can be effected in this way."* Minute division of the air, and its more perfect contact with the washing water, has been effected at the Montsouris Observatory by aspiration through several vessels ("absorbers") containing water, wherein the air is finely divided at the bottom of each by passage through a fine "rose" of glass or platinum; and Mr. Dixon has improved upon this procedure, at Glasgow, by introducing a number of glass beads into each "absorber," whereby the air is still further comminuted and detained for a longer time in contact with the washing water.†

The very efficient "absorber," used by Prof. Ira Remsen, in his experiments for the National Board of Health,‡ consisted essentially of moderately fine pumice stone heated to redness, moistened with water, and put into tubes through which the air to be examined was aspirated by appropriate apparatus.

In all of the procedures above mentioned, as well as in that followed in my experiments, the variations have been in the modes of separting organic matter from the air, its determination having been in each case by the Nessler process.

* Bulletin of the National Board of Health, September 11, 1880.

† Water, Air, and Food. By Cornelius B. Fox; Philadelphia, 1878, pp. 279, 284.

‡ *Op. cit.*

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and for defective valves. At the close of the experiment the apparatus was emptied into a clean glass-stopped bottle, and washed with 30 c. c. of freshly-distilled water by aid of the ball pipette. The washings were added to the original 70 c. c., and the resulting 100 c. c. Nesslerized, as in water analysis. But 10 c. c. of distillate were examined for free ammonia, the usual correction of one-third added, and distillation proceeded with until 40 c. c. had passed over. To the residue in the retort, 10 c. c. solution of potassium hydrate and permanganate were then added, and three successive portions of 10 c. c. each of distillate Nesslerized for "albuminoid" ammonia. In Nesslerizing, but half a cubic centimeter of the Nessler reagent was added to each sample. The same quantity was put into an empty glass, which was filled to 10 c. c. with distilled water from the same lot that had supplied the washing water, and the weak solution of ammonium chloride (1 c. c. = 0.01 milligram ammonia) added lastly, by tenths of a cubic centimeter, until the tint of the assay had been matched as nearly as possible. By this procedure any ammonia which might be present in the distilled water was detected at the start and duly allowed for. In point of fact, it was very rare that the distilled water used, in the preparation of which much care was taken, showed a tint sufficiently pronounced to be measured. Blank experiments were frequently made, with results never exceeding 0.005 milligrams of ammonia.

In estimating the quantity of atmospheric organic matter, either by the method just described, by condensation of atmospheric moisture upon cold surfaces, or by Nesslerizing the first of a snow or rain fall, it often, but not always, happened that the color struck by the Nessler reagent differed so decidedly from that artificially produced in solutions of ammonium chloride, used for comparison, as to make it difficult to determine the point of nearest approximation in tint. When free ammonia was present in sufficient quantity to give a reaction without distillation, such variation from the standard ammonia tint was observed but once (experiment 5). In the estimation of free ammonia by distillation, the color produced was of a vivid yellow, less often yellowish-green; while a green tint tended to predominate in the estimations of "albuminoid" ammonia, *i. e.*, after the addition of potassium hydrate and permanganate to the residue in the retort.

In the following tabulated statement of nineteen estimations of ammonia in samples of air collected "by atomization," these variations in color have been noted as "Nessler reaction," together with such other conditions of the experiments as have appeared to be of consequence in this connection.

TABLE III.—*Estimations of ammonia, per cubic meter of air, by "atomization."*

No.	Date.	Locality.	Free ammonia, before distilling.	Free ammonia, after distilling.	Albuminoid ammonia.	Temperature, Fahr.	Relative humidity, saturation = 100.	Carbon dioxide, parts per 1,000.	Remarks.
	1881.		*Milligrams.*	*Milligrams.*	*Milligrams.*	*Degrees.*			
1	Jan. 20	Mineral room, Smithsonian Institution.	.....	0.156	0.216	75	.....	.....	Amorphus white residue; starch, vegetable fiber, silicate of alumina, long bacilli in rapid motion; dendritic crystals on evaporation. Nessler reactions normal.
2	Jan. 20	West basement, Smithsonian Institution.	.....	0.130	0.180	65	.....	.....	Room used for storing alcoholic specimens of fish; strong odor of propylamin; specimens contain long bacilli, as above; occasional epithelial scales. Nessler reactions normal.
3	Jan. 26	Open air, yard	.....	0.141	0.220	57	54	.....	Deposit mostly silicate of alumina; no bacteria or bacilli. Nessler reaction *yellow*, for free ammonia.
4	Jan. 27	Clerk's office, Bureau Medicine and Surgery, Navy Department.	....	Less than 0.005	Less than 0.005	80	Very low.	.....	Quantity of ammonia too small to be estimated; very scanty deposit; long, active bacilli.
5	Feb. 4	Laboratory yard	Trace.	Lost.	0.085	Below 32	.....	.....	No rain or snow for 72 hours; very little residue, mostly silicate of alumina. Nessler reaction *green*, before distillation; also in No. 1 albuminoid; Nos. 2 and 3 albuminoid normal.
6	Feb. 5	.....do	.....	0.160	0.070	46	34	.....	Scanty residue, mostly silicate of alumina, with old vegetable fiber. Free ammonia Nesslerizes of normal color; albuminoid shows distinct *green*.
7	Feb. 15	.....do	.....	0.130	0.120	62	43	.....	Residue scanty; of no especial interest. Nessler color not noted.
8	Feb. 19	.....do	.....	0.175	Lost.	48	72	0.999	After rain, Nessler color a vivid *yellow;* no shade of brown or green.
9	Feb. 20	Fort Corcoran, Va. (west of Washington).	.....	0.087	0.090	54	.....	.....	Nessler color, *greenish-yellow* for free ammonia; normal for albuminoid.
10	Apr. 13	K street, near laboratory....	.....	0.067	0.125	52	82	0.480	Nessler color, *greenish-yellow* for both free and albuminoid estimations. Wind north.
11	Apr. 15	Laboratory yard	.....	0.200	0.100	52	45	0.982	Wind northeast; Nessler color, bright *yellow*, for free; *greenish-yellow*, for albuminoid ammonia.
12	Apr. 19	K street, near laboratory....	.....	0.130	0.110	59	46	1.003	Wind southeast, cloudy; Nessler color, strong *yellow*, for free; normal for albuminoid ammonia.
13	Apr. 26	Laboratory yard	.....	0.098	0.100	70	64	.....	Wind southeast; free ammonia, vivid *yellow;* albuminoid, normal.
14	Apr. 28	K street, near laboratory....	.....	0.040	0.024	73	62	0.486	Wind west, clear; scarcely perceptible sediment; mostly silicate of alumina. Nessler color not noted.
15	May 18	Laboratory yard	.....	0.240	Trace.	63	70	0.587	Wind east, rain night before. Nessler color near the normal.

TABLE III.—Examinations of ammonia, &c.—Continued.

No.	Date.	Locality.	Free ammonia, before chlorination.	Free ammonia, after chlorination.	Albuminoid ammonia.	Temperature, F'n hr.	Relative humidity, noon station — (in).	Carbon dioxide, parts per 10,000.	Remarks.
	1921.		*Milligrams.*	*Milligrams.*	*Milligrams.*	*Degrees.*			
16	May 26	Laboratory yard		0.067	0.200	73	78		Wind east; clear weather, depauw supply (chlorinated).
17	June 15	do		0.063	0.180	80	62	0.4615	Wind west. Number color not noted; nitrates and nitrites normal for albuminoid.
18	July 20	do		0.066	0.060	83	56		Wind west. Number color not noted.
19	Aug. 20	East window, third story, southwest wing.		0.093	0.050	85	73		Wind southwest; towards the end of a very long season of dry weather. Number colors normal in both examinations.

Fig. 2.

Normal Ammonia viewed transversely to column.

Butyrate of Sodium viewed transversely to column. "Albuminoid."

Butyrate of Sodium viewed transversely to column. "Free."

Normal Ammonia viewed perpendicularly to column.

Butyrate of Sodium viewed perpendicularly to column. "Albuminoid."

Butyrate of Sodium viewed perpendicularly to column. "Free."

From an analysis of the foregoing table it appears that in nineteen observations made at intervals during six months the "Nessler color" varied as follows:

In 8 both free and albuminoid were normal or not noted;

In 4 free ammonia was *yellow*, albuminoid normal or not noted;

In 2 free ammonia was *greenish-yellow*, albuminoid normal or not noted;

In 2 free ammonia was *yellow*, albuminoid *greenish;*

In 1 free ammonia was *greenish-yellow*, albuminoid *greenish-yellow;*

In 1 free ammonia was *yellow*, albuminoid *greenish-yellow;*

In 1 free ammonia was *green* before distillation, not noted after distillation, and the first albuminoid distillate *greenish*, the second and third being normal.

As regards *locality* an analysis of the table shows the colors to have been normal or not noted in two specimens from the Smithsonian Institution, notwithstanding the odor of propylamin in Exp. 2; in one from the clerk's office of the Bureau of Medicine and Surgery; in the laboratory yard four times; on K street, near the laboratory, once; and in a window opening to windward, 30 feet above the street (after a prolonged drought) once. Albuminoid ammonia gave the normal color, while free ammonia struck either yellow or greenish-yellow four times in specimens from the laboratory yard, in one specimen from K street, and in one from Fort Corcoran, outside of the city limits. Both free and albuminoid showed abnormal tints in the laboratory yard twice, and in K street, near the laboratory, twice. Albuminoid reaction was green, free ammonia being normal in one specimen taken in the laboratory yard.

In specimens of rain and snow, which were Nesslerized at various times, both free and albuminoid ammonia gave the normal tint in three instances, yellow before distillation in one, normal before distillation, and yellow afterward for free ammonia, albuminoid being normal, in one. And in specimens of moisture condensed upon cold surfaces, both free and albuminoid reactions were normal in one instance before and after distillation; free ammonia green both before and after distillation in one, albuminoid remaining normal; and in one case, in which the quantity collected was too small for distillation, the color was normal.

It appears, then, from the foregoing analysis, that the cause of these variations in color is not always present out of doors, that it has not been observed in any of the few specimens taken in doors, and that it does not appear to depend upon any cause local to the places examined. The difference in quality of color is distinct and decided, the foreign material giving in all cases a tint, either yellow or greenish-yellow, of more pronounced quality and at the same time greater transparency than the normal; so that when the column of colored liquid is viewed vertically the tendency is to underestimate the quantity of ammonia present, while if viewed transversely or obliquely the tendency is to overestimate it. I have not observed similar variations in Nesslerizing potable waters, or in any artificial ammonia solutions, and it therefore does not appear to me possible that they can be due to impurities in the reagents used; nor have I as yet found any mention of the phenomenon in such authorities as have been accessible to me.

I have supposed that the cause of the variations would be found in the occasional presence of other *amines*, wherein one or more atoms of hydrogen are replaced by compound radicles containing carbon; and that such *amines* result from putrefactive changes of organic matter, either in the air itself or upon surfaces exposed to the air. This notion gets some support from Mr. Angus Smith's theory that the relatively larger quantity of ammonia found upon surfaces is due to decomposition of the organic part of the air dust on the surfaces themselves. The theory is an attractive one, but is not supported by the few experiments which it has been possible to make as yet in the direction of testing it. These experiments are far too imperfect to warrant any decided conclusion, and are detailed here only by way of suggestion, in the want of leisure to go farther with them at present.

1. Two drops of *fluid extract of ergot* (containing propylamine) in 100 c. c. of distilled water, when distilled, gave, upon Nesslerization, only the normal ammonia color reaction.

2. *Butyrates of sodium and calcium* in very dilute solution in distilled water (free from ammonia) gave, upon distillation, both before and after the addition of potassium hydrate and permanganate, the clear *greenish-yellow* which has often been observed in air examinations.

3 *Carbonate of ammonia* in distilled water (about 0.2 per cent.) when distilled gives dense ammonia color reaction, both before and after treatment with potassium hydrate and permanganate, showing on dilution no trace of the abnormal color.

4. *Acetic*, *butyric*, and *formic* acids, and a mixture of the three, all largely diluted, were Nesslerized without distillation. Acetic and formic acids were unaffected; butyric acid gave the normal ammonia brown-yellow.

5. The butyric acid solution of experiment 4 was distilled (after previous addition of Nessler reagent) and tested as for free ammonia; very faint normal ammonia reaction.

6. A small quantity of distilled water from the common wash-bottle was redistilled and the distillate Nesslerized; reaction for normal ammonia. After about one-half had gone over and, presumably, no free ammonia remained, added 4 drops of butyric

and did not commence the distillation. A faint reaction, *greenish-yellow* color. This experiment was made to ascertain whether the normal ammonia noted in experiment 4 existed as an impurity in the butyric acid—as butyrate of ammonia for example.

5. In the liquid remaining in the retort after experiment 6 added lime water; a [illegible] precipitate (impure calcium butyrate). Distilled one-half and Nesslerized; distinct indications of normal ammonia, introduced as I suppose with the lime water. Added [illegible] hydrate and permanganate to residue in the retort, resumed distillation, and Nesslerized; pale but distinct *greenish-yellow*.

So far as these rough experiments show anything they indicate that the abnormal color observed in the Nesslerization of air specimens may be produced from butyrates of sodium and calcium after distillation, both before and after treatment with potassium hydrate and permanganate; that butyric acid alone gives the normal ammonia reactions before distillation, acetic and formic acids being unaffected, and that the ammonia observed probably does not exist as an impurity in the butyric acid. It further appears from the ergot experiment (experiment 1) that the abnormal color is not due to propylamine. There is no reason to suppose that butylamine is formed in any part of the experiments described. The indication, so far as I have gone, is that products of the decomposition of organic matters other than ammonia are capable of responding to the Nessler reagents, with a distinct difference in color, and that such substances are not necessarily *amines*. Upon the accompanying sheet I have endeavored to match the colors observed, contrasting the normal ammonia tints with those of butyrate of sodium, examined as for albuminoid and free ammonia. The latter closely approximate the *yellow* and *greenish-yellow* tints observed in air analysis.

Reverting to Table III, it appears that the largest quantity of free ammonia observed in one cubic meter of air was 0.240 milligram in the laboratory yard, May 18, the least 0.040 milligram, in K street, near the laboratory. In Table IV these observations are compared with some results obtained in other localities and by various methods.

TABLE IV.—*Estimations of free ammonia in one cubic meter of external air.*

Observer.	Locality.	Maximum.	Minimum.	Mean.	No. of observations.	Mode of collection.
		Milligrams.	*Milligrams.*	*Milligrams.*		
*R. Angus Smith ..	London and vicinity ...	0.203	0.028	0.061	18	Air washed by shaking in bottle with water.
†R. Angus Smith ..	Laboratory and vicinity	0.190	0.071	0.122	10	Do.
*R. Angus Smith ..	London Underground Railway.	0.109	0.034	0.072	2	Do.
*R. Angus Smith ..	Glasgow	0.101	0.036	0.078	4	Do.
‡William Dixon (†)	Manchester.....	.....	.....	0.093	1	Do.
‡William Dixon (†)	..... do	.....	.....	0.070	1	Aspiration through water.
§ Ira Remsen.....	Baltimore.....	0.157	0.064	0.097	11	Aspiration through pumice-stone.
J. H. Kidder	Washington	0.240	0.040	0.115	18	Atomization of water with air.

*Air and rain, pp. 432–434.
†Many of these observations made indoors.
‡Water, Air, and Food, p. 285.
§Report on Organic Matter in the Air. National Board of Health Bull., September 11, 1881, p. 520.

Excluding Mr. Angus Smith's series of observations made partly indoors (the second series of the table), the quantity of ammonia found in a cubic meter of air increases in proportion to the effectiveness of the mode of collection. Simple aspiration gives the smallest quantity; shaking of successive portions of air with the same quantity of water follows next; aspiration through pumice-stone and atomization furnish the largest quantities observed. Separating my observations according to the localities of collection, the results will appear as in Table V.

TABLE V.—*Milligrams of free ammonia per cubic meter of air.*

Locality.	Maximum.	Minimum.	Mean.	Number of observations.
Laboratory yard.....	0.240	0.066	0.137	10
K street, near laboratory.....	0.130	0.040	0.079	3
Smithsonian Institution	0.156	0.130	0.143	2
Bureau Medicine and Surgery	.....	.....	0.005?	1
Window of laboratory	.....	.....	0.093	1
Fort Corcoran	.....	.....	0.087	1

Considering the methods of collection followed by Professor Remsen and myself as of about equal value, it appears that the outside air of Washington contains nearly the same average quantity of free ammonia as that of Baltimore, with a slight advantage in favor of the former (represented by the figures for K street, Table V); and that the air of the laboratory yard has generally contained rather more free ammonia that that of the neighboring street, for reasons already mentioned. At the time of taking the samples examined from the clerk's office of the Bureau of Medicine and Surgery there were no instruments at hand for taking the relative humidity, but it was observed that the air was notably dry and oppressive, the rooms being heated by steam-coils. Moisture being a necessary factor in the decomposition of organic matter, it is probable that the very small quantity of ammonia observed on that occasion was due to the dryness of the air, as well as to the fact that the apartment is large, occupied by but few persons, and kept unusually free from dust. The circumstances being exceptional, this observation has not been considered in the calculations of Table IV.

Albuminoid, or "potential" ammonia, is essentially different from free in its nature, representing the as yet undecomposed organic matter which is present in the air at the time of examination, and which is not by any means necessarily hurtful, although always open to suspicion. In this respect the hygienic importance of free and albuminoid ammonia in air and in potable waters differs decidedly. The atmospheric organic substances which afford ammonia after distillation from potassic hydrate and permanganate may be living or dead vegetable detritus not liable to decay under ordinary atmospheric conditions, or animal detritus (epithelium, for example), charged with the poison of infectious exanthemata. We have no chemical means of discriminating between hurtful and harmless organic matter, and are therefore compelled to regard all alike with suspicion. So far as free ammonia in itself is concerned, it is probable that no product of decomposition is more nearly innocuous, and that its importance to the hygienic chemist resides only in its value as an index to the amount of organic matter that has already undergone decomposition. In so far it occupies with more dignity the place about to be vacated by carbon dioxide.

In 16 observations in which albuminoid ammonia was estimated by atomization (see Table III) the least result was 0.024 milligram to the cubic meter, in K street, near the laboratory, April 28, 1881, and the greatest, 0.220 milligram, in the laboratory yard, January 27, 1881. The mean of the 16 observations is 0.121 milligram. The observations are compared with those made elsewhere, and separated according to the localities of collection in Tables VI and VII, which follow:

TABLE VI.—*Estimations of albuminoid ammonia in one cubic meter of external air.*

Observer.	Locality.	Maximum.	Minimum.	Mean.	No. of observations.	Mode of collection.
		Milligrams.	*Milligrams.*	*Milligrams.*		
*R. Angus Smith..	London and vicinity....	0.271	0.065	0.150	18	Air washed by shaking in bottle with water.
†R. Angus Smith..	Laboratory and vicinity	0.427	0.095	0.266	10	
R. Angus Smith..	London Underground Railway.	0.457	0.290	0.373	2	Do.
R. Angus Smith..	Glasgow	0.457	0.258	0.304	4	Do.
‡Ira Remsen.....	Baltimore	0.457	0.041	0.182	11	Aspiration through pumice-stone.
J. H. Kidder.....	Washington.....	0.220	0.024	0.121	16	Atomization of water with air.

*Air and Rain, pp. 436–438. †Many of these observations made indoors.
‡Report on Organic Matter in the Air, National Board of Health Bull., September 11, 1881, p. 520.

TABLE VII.—*Milligrams of albuminoid ammonia per cubic meter of air.*

(Washington observations.)

Locality.	Maximum.	Minimum.	Mean.	Number of observations.
Laboratory yard	0.220	0.060	0.128	9
K street, near laboratory	0.125	0.024	0.086	3
Smithsonian Institution	0.216	0.180	0.198	2
Bureau Medicine and Surgery	.....	.....	0.005†	1
Window of laboratory	.....	.....	0.050	1
Fort Corcoran	.....	.....	0.090	1

Disregarding, as in the case of free ammonia, the indoor observations of Mr. Angus Smith, and the observation made at the Bureau of Medicine and Surgery, an examination of the Tables VI and VII indicates that the air of Washington contains less undecomposed organic matter than that of the cities with which it is here compared. Several considerations tend *a priori* to the same conclusion, the streets being unusually wide, often interrupted by extensive parks, and in the neighborhood of the observations paved with smooth asphaltic concrete, which is unfavorable to the retention of dust. It occurs to me, however, that the process of collection by atomization, theoretically as nearly perfect as possible for free ammonia, may be open to criticism, when the solid parts of organic air dust are to be examined. For I have often noticed a remarkable tendency in air dust to *adhere* to surfaces, and it may be that some of the particles have been arrested in this way in the course of the tube leading from the hand-ball to the atomizer, although the orifice of the latter has not yet been observed to be obstructed from this cause. The number of observations in each case presented is too small, and the variations between maximum and minimum too wide, to admit of any claim that these figures represent the actual mean contents in ammonia or organic matter of the air examined, and such inferences as may be drawn from the observations must be qualified by the consideration that the composition of the air has been found to differ widely in places very near together, at about the same time, owing to local causes. The most that we can infer is that the quantity of free and albuminoid ammonia in the external air of Washington is not excessive in quantity, and compares favorably with that of other cities. It is reasonable also to suppose that the quantity usually ranges within the extremes here presented; that, where ventilation is free, the winter and summer air do not differ greatly in organic contents, and that the air of large and well-ventilated buildings need not be worse in this regard than that out of doors, even when artificially heated.

A few specimens of snow and rain water, and of moisture condensed from the air upon cold surfaces, have been examined for ammonia, with the results which follow:

December 27, 1880.—The last of a snowfall was collected and Nesslerized without distillation; reaction for ammonia distinct, with normal color. The specimen amounted to less than 100 c. c., and was therefore not estimated quantitatively. It was, however, distilled, the destillate giving a distinct *yellow* color with the Nessler reagent.

January 31, 1881.—A portion of the first of a snowfall, taken near the ground in the laboratory yard after several days of clear and dry weather, showed: Before distillation, 0.200 milligrams ammonia to the liter; after distillation, 0.470 milligrams ammonia to the liter; albuminoid, 0.084 milligrams ammonia to the liter; all of the normal color.

February 19, 1881.—A large quantity of rain, collected in a vessel exposed all night in the laboratory yard, showed: Before distillation, a trace of ammonia; after distillation, 0.0214 milligrams ammonia to the liter; albuminoid, 0.0530 milligrams ammonia to the liter.

February 27, 1881.—A small quantity of the first of a rainfall showed 0.5 milligrams ammonia to the liter before distillation. The specimen was not distilled.

March 8, 1881.—About 140 c. c. of the first of a shower, collected in the laboratory yard showed: Before distillation, 0.500 milligrams ammonia to the liter; after distillation, 33.300 milligrams ammonia to the liter; albuminoid, 0.200 milligrams ammonia to the liter.

A comparison of this very large quantity of free ammonia with the specimen collected February 19, the latter representing the mixture of the later with the earlier parts of a rainfall, shows how very large a part of the free ammonia in the air is washed out by the first part of a shower. Lest the quantity noted March 8 should appear to be improbably large, I will mention that M. Bineau found the *average* contents of winter rain in ammonia (at the Lyons Observatory, 1853) to be 16.3 milligrams per liter. M. Boussingault found 50 milligrams to the liter of moisture condensed from a fog, and Mr. Angus Smith has noted to the liter of rain 14.7 milligrams, at Glasgow; 22.9 at Manchester; 32.35, in Bishopgate street, London; and 39.80 in another street in London. It is not noted as to any of these estimations that they were confined to the *first* of a rainfall.* The last-named observer supposes that ammonia in rain water is never free, but combined with hydrochloric or sulphuric acid. It is plain that such a specimen as that examined March 8, if presented for analysis as a potable water, would be promptly rejected on account of the excessive quantity of ammonia, both free and albuminoid, which it contains.† So far as the free ammonia is concerned, however, inasmuch as the gas has originated from the decomposition of organic matters not contained in the water itself, such a conclusion would probably be erroneous. As to the quantity of albuminoid ammonia, although it falls below the average

*Air and Rain, pp. 277 *et seq.*

†Water Analysis, Wanhlyn & Chapman, London, 1879, p. 68.

determined by Angus Smith for all Scotland,* excluding Glasgow (0.212 milligrams to the liter), I do not feel satisfied that it would be safe to disregard so large an indication, even for rain-water, although, in places where the supply of drinking-water comes entirely from rain (Gibraltar, for example), no hygienic objection has, to my knowledge, been urged against it.

Moisture has been frequently collected upon cold surfaces, as in the experiment first suggested by Moscati in 1809, and in a single instance enough was got to permit of Nesslerization. Two large glass funnels were securely stopped, washed on the outside with much tap water, but not wiped, slung securely, and filled within with pounded ice. When the relative humidity and temperature were not too low, moisture from the air was condensed on the outsides of the funnels in quantity sufficient to drop into clean wide-mouthed glass-stopped bottles, which had been thoroughly washed with boiling distilled water. Between April 22 and May 18, 1881, about 9 fluid ounces of moisture were collected in this way, the bottles being kept securely stopped when not in use, and examined for ammonia on the last-named date, with the following results: Before distillation, 0.15 milligrams ammonia to the liter; after distillation, 13.6 milligrams ammonia to the liter; albuminoid, 0.24 milligrams ammonia to the liter. The liquid was found to be feebly alkaline to litmus, the red color being restored on drying (free ammonia), and contained vibriones, bacteria, fungi, flagellate and ciliated infusoria, and unrecognized ova, besides an alga resembling *œdogonium*.

March 9 two specimens were examined which had been collected in the same way at intervals since February 9, one out of doors and the other within the laboratory. Owing to the coldness of the weather the quantity was small, and I note only that the free ammonia before distillation was very much greater in the outdoor specimen than in that taken indoors, and that the former presented a faintly alkaline reaction, with algæ and many quiescent organisms not noted in the latter. A specimen collected August 30, after only two hours' exposure at an open window 30 feet from the ground, contained "much free ammonia," and very little solid matter.

These experiments have, of course, no quantitative value, but are interesting as indicating that even in winter a considerable quantity of ammonia appeared in specimens taken out of doors; much more, indeed, than was found in those collected within the laboratory. It is probable that the source of the ammonia is to be sought rather in the organisms whose germs were carried down by the outdoor moisture, and which afterwards developed into life or decayed, than in the contents of the air at the time of collection.

As to other chemical ingredients of the air, which are supposed to be due to the decomposition of organic matters, viz, nitrates, nitrites, and, according to Angus Smith, sulphates (from the oxidation of sulphuretted hydrogen†), no attempt has been made in the course of these observations to get quantitative estimations. The *presence* of these salts has been observed occasionally, as follows:

In 11 atomizations, no nitric acid, nitrites once, sulphates twice.

In 2 snowfalls, nitric acid once, no nitrites, sulphates once.

In 3 rainfalls, nitric acid twice, nitrites twice, sulphates twice.

In four condensations, nitric acid once, nitrites 3 times, sulphates 4 times.

For nitric acid, brucia and the indigo tests were employed; for nitrites, starch and iodine; and for sulphates, baric chloride. Usually the liquid was concentrated to one-fourth its bulk before applying the tests.

Other substances were recognized as present in sufficient quantities to respond to chemical tests as follows:

In 11 atomizations, chlorine was recognized 8 times, silicate of alumina 9 times, calcium once.

In 2 snowfalls, chlorine was recognized once, and silicate of alumina twice.

In 2 rainfalls, chlorine, calcium, iron, and aluminium silicate each once.

In 4 condensations, chlorine 4 times, calcium twice, sodium, potassium, and magnesium each once.

I do not mean to assert that these or other substances were not present in the air oftener than above stated. Many of the specimens were examined only for special substances; many others were not examined chemically at all; my examinations last year‡ having given me no reason to believe that the air of Washington was likely to contain salts not frequently observed in that of other places. Such chemical tests as were applied were made with a view to the identification of certain microscopic crystals which have appeared in drops of wash-water dried upon glass slips, and which will be referred to again in the course of this report, rather than to determine the absolute frequency and number of the substances sought for. It is probable that chlorine, sodium, potassium, calcium, carbon dioxide, and sulphuric acid are always present in the air, even when not in sufficient quantity to respond to the ordinary reagents ap-

* *Op. cit.*, p. 321.

† *Op. cit.*, p. 265.

‡ See Report of the Surgeon-General for 1879, p. 50.

plied to the small amounts of fluid examined.* Carbon dioxide, for example, which is known to be always present in the air, and supposed to be present in rather unusual quantity in the locality under consideration, was never recognized by chemical tests, and sodium chloride was often identified by its microscopic crystals when the quantity was too small to give a reaction with silver nitrate.

MICROSCOPIC EXAMINATION OF THE AIR.

The material for the microscopic examination of the air has been obtained in the following different ways:

1. Evaporation to dryness of a drop of the fluids resulting from atomization and from condensation of moisture upon cold surfaces
2. Air dust collected upon slides and small flattened watch-glass-like disks by simple exposure within and without doors.
3. Air dust collected and retained by a drop of glycerine upon glass slips exposed to the air.
4. Air dust collected by the contrivance represented by Fig. 3.

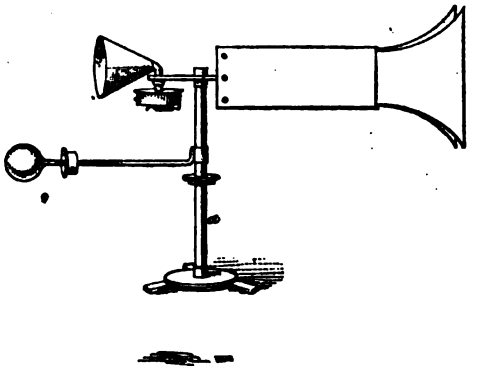

FIG. 3.

The contrivance consists essentially of a double-winged vane, turning freely upon an agate bearing, and carrying at the end opposed to the wind a glass funnel with its stem bent at right angles. Beneath the end of the funnel a glass slip, upon which is a drop of glycerine, is held horizontally by spring clips. A movable weight serves to balance the two ends of the vane, and the upright rod, *a*, can be unscrewed from the tripod and stuck into any wooden surface. For this purpose it terminates in a sharp steel point, not shown in the figure.

The principle of this apparatus is not essentially different from that of the aëroscopes devised by Pouchet,† Maddox, and Dr. Cunningham.‡ In these instruments the funnel has been drawn out to a fine point, so set as so impinge upon a thin cover or slip set vertically, and the glycerine with which the latter was covered had a tendency to absorb moisture from the air and to run off from the glass after long exposure. By bending the tube of the funnel at right angles this difficulty has been obviated in the apparatus here figured, and some improvement has been made in the details of its construction.

The photo-micrographs and drawings presented herewith illustrate the more frequently recurring and conspicuous microscopic objects observed in the specimens collected by the methods above described, with such explanatory notes as the short time at my disposal will allow. It is much to be regretted that the necessity for an immediate presentation of this report makes it impossible to discuss these numerous and varied objects as their interest deserves. I hope, however, that the illustrations will be sufficient in themselves to produce something of the pleasure which their long study has afforded myself, and that the investigations indicated will not prove to have been made altogether in vain.

Moisture which had been impregnated with the contents of the air, either by "atomization," condensation upon cold surfaces, or by the natural washing process of

* See Air and Rain, p. 233; Parkes' Hygiene, 5th ed., p. 102; Les Poussières de l'Air, Tissandier, Paris, 1877, p. 12, &c.

† *Comptes rendus*, T. 1, p. 748.

‡ Microscopic Examination of Air, D. D. Cunningham, surgeon, &c., London, 1874.

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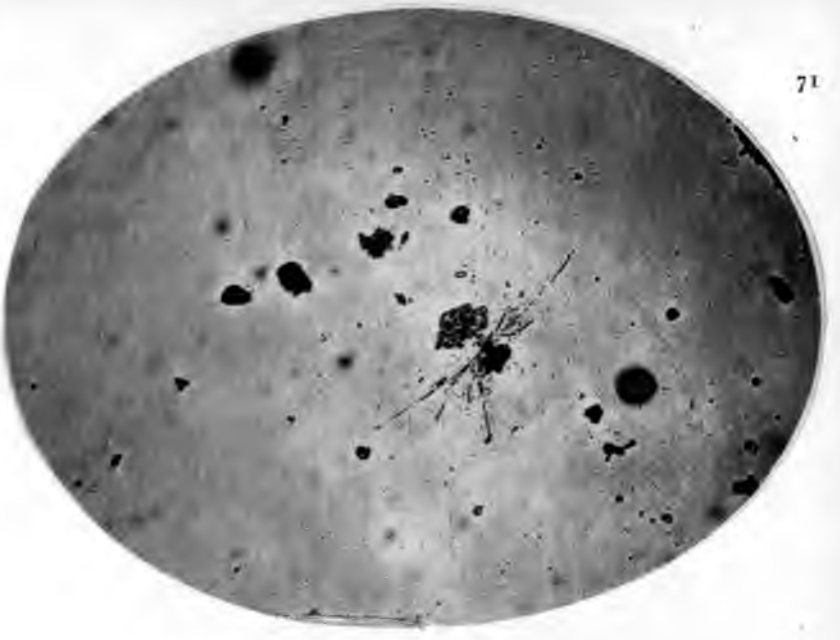

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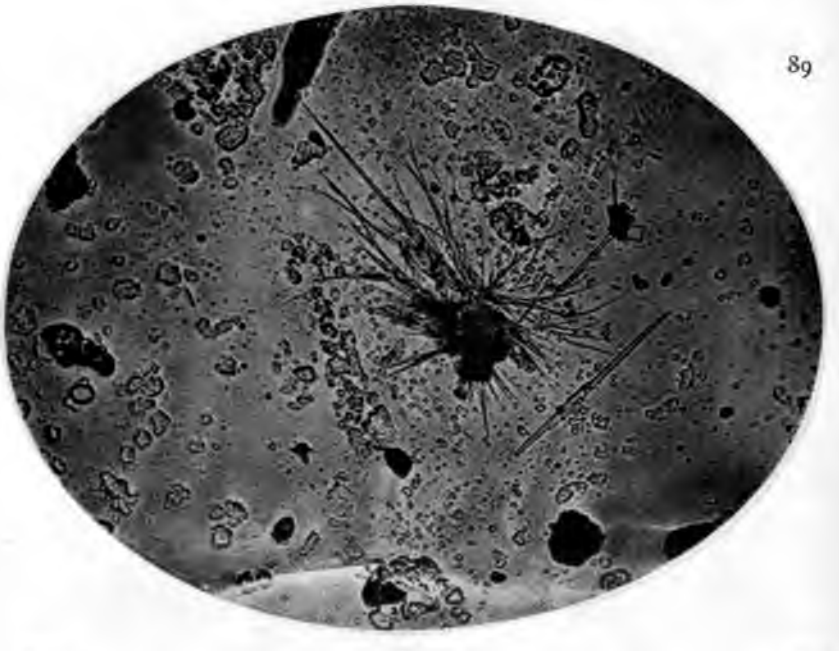

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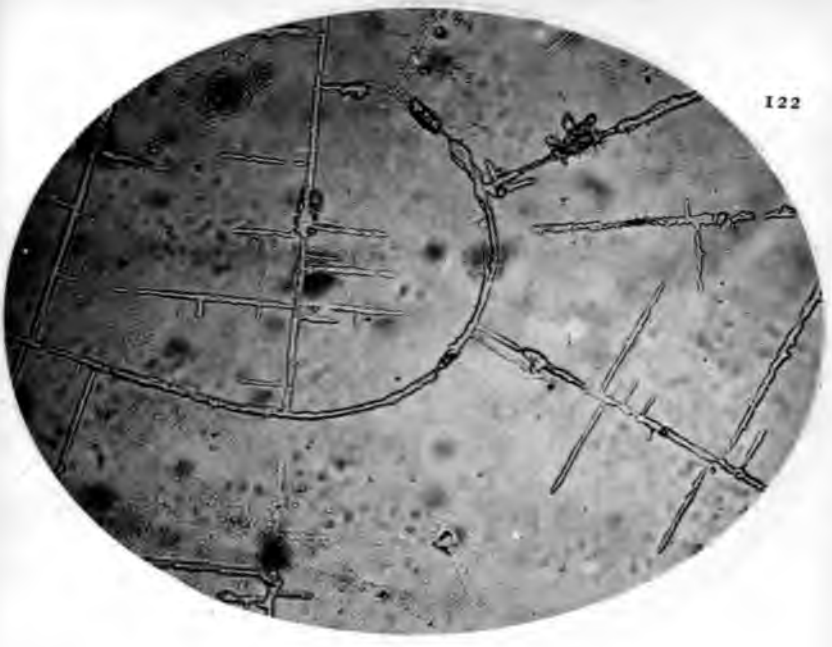

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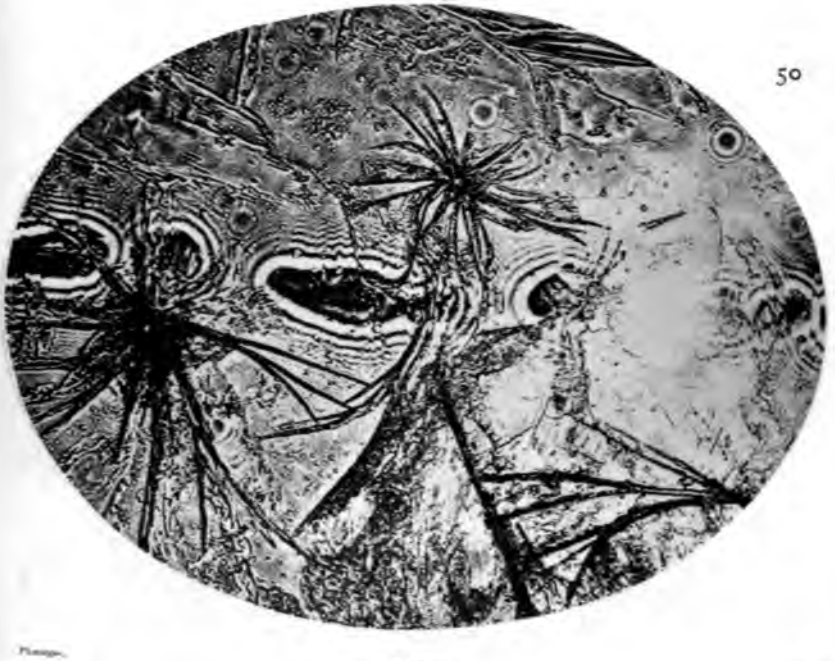

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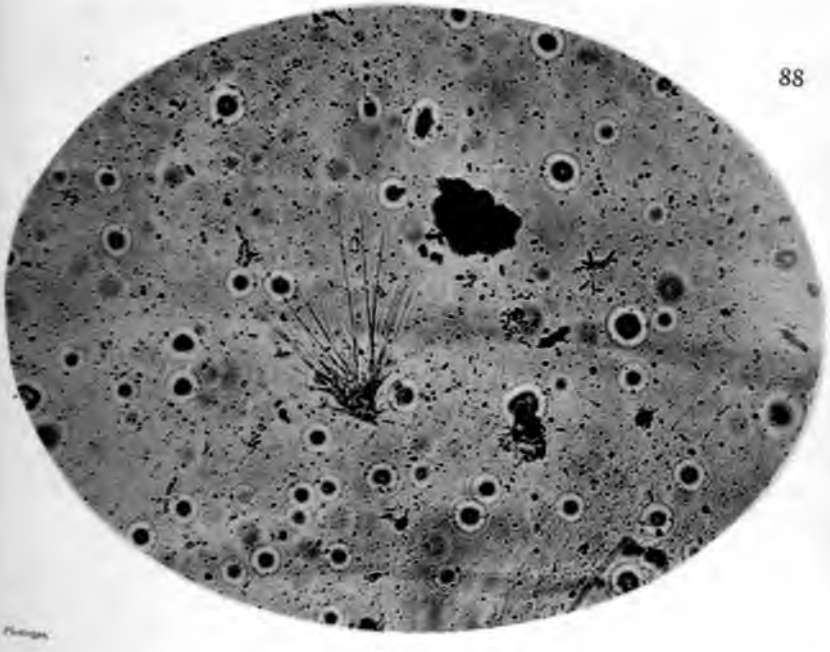
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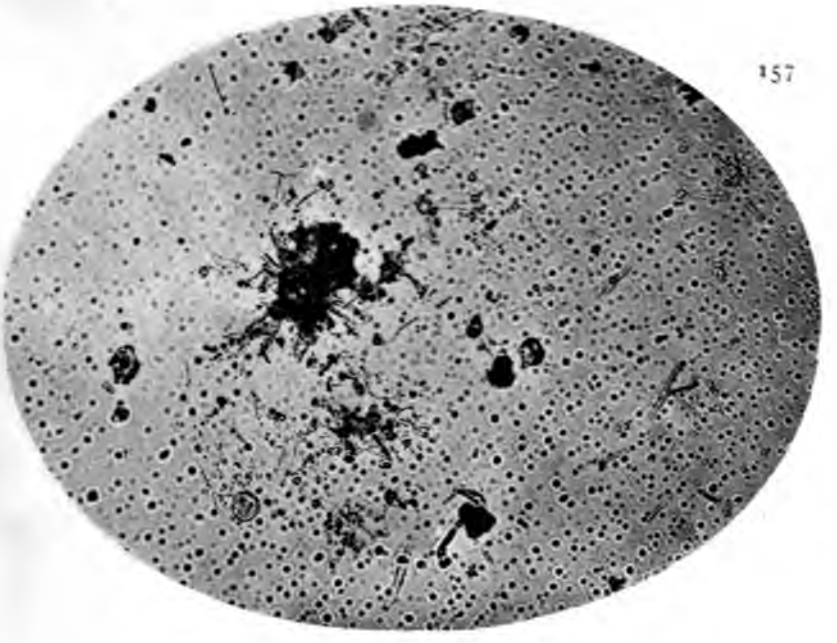

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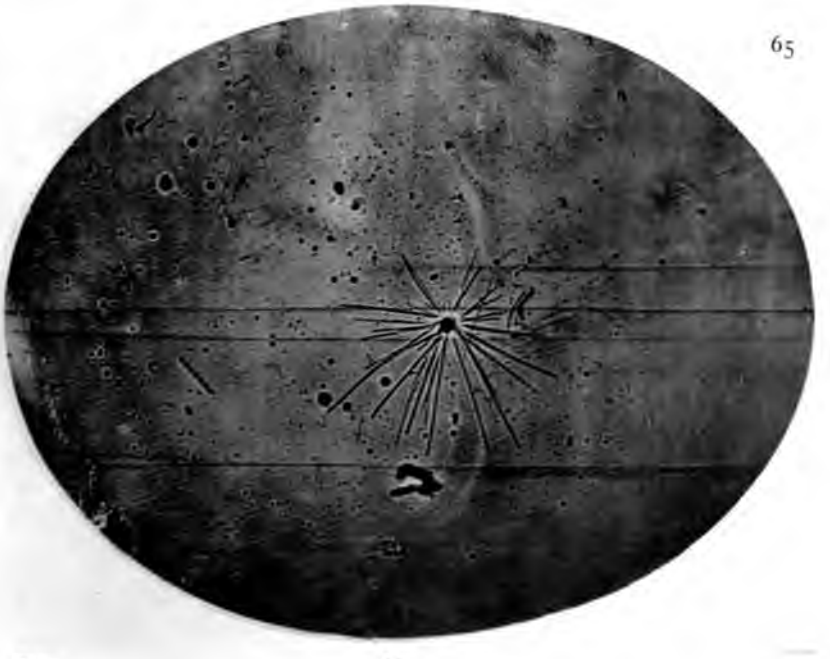


65

126

154

EXPLANATION OF PLATES.

PLATE 1.

Negative No. 20. Crystals, salts of fat acids and potassium sulphate, from in-door air-dust. × 300.

Negative No. 61. Crystals, salts of fat acids, from air-dust of bedroom. × 260.

PLATE 2.

Negative No. 71. Fat crystal forming from a scale of epithelium. Air-dust of laboratory. × 260.

Negative No. 89. Residue from a drop of perspiration, dried on a glass slip. × 245.

PLATE 3.

Negative No. 122. Crystals from moisture condensed from out-door air. × 290.

Negative No. 50. Crystals of calcium butyrate from dilute artificial solution. × 260.

PLATE 4.

Negative No. 57. Fungus (*Phycomyces nitens?*) from air-dust of bedroom. × 260.

Negative No. 74. Mucor and bacteria (?) from moisture condensed from out-door air. × 260.

PLATE 5.

Negative No. 137. Bacteria and crystals from moisture condensed from out-door air. × 670.

Negative No. 88. Crystals (?) and bacteria, from a very dilute soluton of sodium chloride, exposed to the air. × 130. (The larger round spots are drops of moisture condensed on the under surface of the covering glass, and a little within the focus.)

PLATE 6.

Negative No. 157. Crystals, mycelium of a minute fungus, bacilli, micrococci, and nucleated cells (ova?), from moisture condensed from out-door air. × 300.

Negative No. 65. From air-dust of bedroom. × 260.

PLATE 7.

Negative No. 145. Leaf-hairs and pine pollen from out-door air-dust. × 300.

PLATE 8.

Negative No. 150. Nucleated cells, residue from a drop of melted snow. × 300.

Negative No. 160. Nucleated cell and crystalline needles from moisture condensed from air. × 300.

PLATE 9.

Negative No. 126. Epithelium from out-door air, by atomization. The black dots are aluminium silicate. × 290.

Negative No. 154. Crystals, bacilli, and micrococci (?) from moisture condensed from out-door air. Some of the small dots are partly deliquesced crystals. × 300.

PLATE 10.

Negative No. 170. Compound spore of *Sphæria* (*herbarum?*) from out-door air-dust. × 300.

Negative No. 167. Spore of a pollen, common in the air-dust of late summer, and found in large quantity in the secretions of "hay-fever." × 300.

INDEX TO NEGATIVES.

Negative No. 20	Plate 1	Negative No. 126	Plate 9
No. 50	Plate 3	No. 137	Plate 5
No. 57	Plate 4	No. 145	Plate 7
No. 61	Plate 1	No. 150	Plate 8
No. 65	Plate 6	No. 154	Plate 9
No. 71	Plate 2	No. 157	Plate 6
No. 74	Plate 4	No. 160	Plate 8
No. 88	Plate 5	No. 167	Plate 10
No. 89	Plate 2	No. 170	Plate 10
No. 122	Plate 3		

rain and snow falls, when dried upon a glass slip has been found to contain the following-named substances:

1. Epithelium from the skin and mucous membranes.
2. Vegetable epithelium and unrecognized débris.
3. Hairs and threads of various fabrics.
4. Particles of sand, glass, metals, soot, and starch.
5. Parts of the chitinous shells of small insects.
6. Bits of feathers and the pappus bristles of composite plants.
7. Minute, highly-refracting dots, simulating *micrococcus*.
8. Crystals of various forms and sizes.
9. Pollen spores of many different kinds.
10. Leaf hairs.
11. Mycelium and spores of fungi.
12. Nucleated cells, resembling leucocytes.
13. Bacteria, as *bacterium*, *ribrio*, *bacillus*, and *micrococcus*, and under the forms of aggregation known as *zoöglœa*, "swarms," *leptothrix*, and *torula*.

When observed fresh, after preservation for a longer or shorter time in well-stopped glass bottles, the same moisture has contained, besides many of the objects above noted—

1. Living algæ.
2. Amœba, flagellate and ciliate infusoria.
3. Fungi.
4. Bacteria of many forms.

Specimens collected by the vane aëroscope (Fig. 3) and mounted in glycerine, abounded in pollen, leaf hairs, spores of *sphœria*, epithelium, and detritus, both organic and inorganic.

Dust collected dry, by simple exposure of slips and disks to the air, contained sand, soot, &c., and numerous crystals, mostly rods and radiating needles.

And, finally, the disks and tubes containing collections made in hospital wards abounded in epithelium, starch, cells resembling leucocytes, and threads and hairs.

Epithelium, as appears from the foregoing summary, is always and everywhere present in the air. The specimen from which the accompanying illustration (photograph No. 126) was taken was collected out of doors on the 4th of February by atomization when the temperature was below freezing. Considering the probability of the communication of contagious exanthemata by this mode, the constant presence of epithelium in the air becomes a fact of considerable hygienic importance.

Particles of *glass* are often found upon air slides which do not come from the air itself, but from the tube by which the drop to be examined is transferred to the slide, and which is often allowed to rest upon the slide for a time, while the solid contents of the drop are subsiding. When the glass tubes used for this purpose have been heated to incipient fusion, so that the sharp edges of their orifices are rounded, no particles of glass appear in the specimens.

Entire shells of *acarini* (No. 92) have been not uncommon in the air. Other insect detritus have been mostly scales of lepidoptera and parts of flies and spiders.

The pappus bristles of many of the *compositæ*, especially the late flowering asters, are often found in the air; a common form resembles miniature stems of *equisetum*.

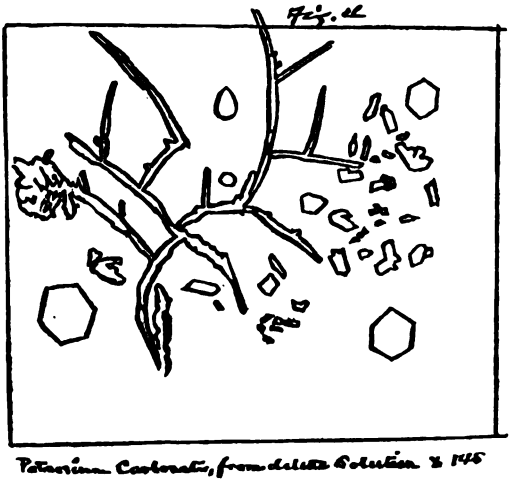
Minute, highly-refracting dots, very numerous in winter dust, are likely to be mistaken for *micrococcus*, especially when mounted in fluid and agitated by the Brunonian movement. They are usually the most minute parts of coal-ashes, and may be distinguished from organic forms by the fact that they are not affected by strong sulphuric acid. The accompanying specimen was separated by Surgeon J. M. Flint from the dust of a room provided with a coal fire, by elutriation. Upon chemical examination the dust was found to consist almost entirely of *aluminium silicate*, a product of the combustion of coal. In old slides minute drops of moisture are very likely to collect upon the under surface of the covering glass, presenting much the appearance of *micrococcus*. A gentle heat will usually cause such dots to disappear.

As noted in my report of last year,* microscopic crystals are of common occurrence in residues of moisture which has been exposed to the air, and present a great variety of forms. I have spent a great deal of time in efforts to identify these crystals by comparing them with the forms presented by artificial solutions of the chemical compounds found by actual analysis to be present in the air. In this way it has been possible to recognize with reasonable certainty crystals of sodium chloride, sulphate and bicarbonate, ammonium chloride, sulphate and carbonate, potassium sulphate and carbonate, and calcium sulphate. Some of the most common forms remain, however, unidentified, including a great variety of acicular crystals, grouped in radiating bundles, which I presume to be fat acids and their salts, resulting from the decomposition of organic matter and the evaporation of perspiration. In photograph No. 71, for example, such a crystal appears to have been caught in the act of formation from a scale of ephithe-

* Report of the Surgeon-General, 1879, p. 51.

lium, and a conspicuous bundle appears in the dried drop of perspiration represented by No. 89.

After a long series of observations I am, however, constrained to believe that there is no absolute reliance to be placed upon identity or similarity of form in the recognition of crystals occurring in dilute solutions. The accompanying rough sketch (Fig. 4), for example, represents some of the different forms observed in the residue from a single drop of a dilute solution of Merck's "C. P." potassium, carbonate in distilled water. If all of the forms there represented are actually the same salt, it is evident that they are too much influenced by the circumstances under which crystallization is effected to be relied upon for identification. The hexagons, I may remark in passing, have always been found in residues from potassium carbonate, and are o frequent occurrence upon air-slides.* The accompanying photographs (Nos. 20, 61



66, 68, 95, 122, 123, 124, 135, 139, 140, 142, 143, 153, 154, 157, 158, 160) are so labeled as to the date, source, and nature of the specimens represented, so far as this last may be ventured upon, as to furnish all necessary explanation. No. 50, from an artificial solution of calcium butyrate, is introduced to show the tendency of the salts of fatty acids to take on the radiating forms observed in some of the illustrations presented.

The curious pollen of the pine (Nos. 149, 156), and the leaf hairs represented by Nos. 26, 91, 145, are among the commonest objects in the air of early spring. Later in the season the place of these forms is taken by other kinds of pollen (Nos. 141, 146, 147, 150, 155), among which those of several species of grass (mostly species of *Poa* and *Agrostis*) have been recognized. The form illustrated by photograph No. 167 is of especial interest, in that it was observed to be present in great numbers in the nasal secretion of a case of *catarrhus æstivus*, in August last. It resembles the pollen of a grass, and was first noticed in the air August 19.

Fungi which have been noticed are represented by photographs Nos. 51, 57, 65, 70, 74, 157. Most of these doubtless have been developed *in situ*, after the slides had been prepared. In early summer the peculiar spores of *Sphæria* (*herbarum?*) (photograph No. 51) were of common occurrence. This fungus has been found growing upon the

* In *Les Poussières de l'Air* (Paris, 1877), M. Gaston Tissandier has figured many varieties of crystals, obtained for the most part from snow and rain (pp. 24–25), which he describes as nitrate of ammonia. This is scarcely possible, since similar crystals have often been observed during the past year in residues from moisture which was found to contain no trace of nitric acid. He confesses, moreover (p. 27), that he has tried in vain to reproduce the forms figured by evaporation of solutions of this salt, which is, in fact, far too deliquescent in its nature to persist at ordinary humidities. From repetitions of his experiments I conclude that only the slender needles figured on page 24 of his work can possibly be ammonium nitrate. Most of the forms shown in that and succeeding figures can be reproduced by the crystallization of sodium chloride (cubes), potassium carbonate (hexagons), ammonium chloride (crystals branching at right angles, or angles of 45°), ammonium sulphate ("*glaires*"), calcium sulphate (rods obliquely cut at the ends), sodium sulphate (sheaf-like forms), and ammonium carbonate (fan-like rows of dots). All of the forms figured by Tissandier have been observed in specimens collected from the air of Washington.

minuter stems of red clover in the laboratory yard (No. 51). Fungi are always present in moisture condensed upon cold surfaces, within a few days of collection. These specimens (of condensed moisture), although closely stopped, have been found likewise to contain living *algæ amabæ*, flagellate and ciliate infusoria, and bacteria of many forms (see Nos. 133, 136, 137, 158, 159, 160), the spores or germs of which must have been present in the air, even when collected in winter.

Nucleated cells, resembling leucocytes, are generally the dry and quiescent form of ciliated monads. It may be, however, that in air from hospital wards they are really pus cells, but the actual presence of monads in the air, under a form closely simulating pus cells, should be borne in mind when such air dust is under examination.

Finally, photographs Nos. 65, 70, 76, &c., 151 represent forms of doubtful nature, deposited from the air, or formed upon slides in presence of the air.

In this same connection, Dr. Stewart, of the Swatara, states that—

"Attempts to trace a connection between the length of the sick-list and the quantity of carbon dioxide in the air on the berth-deck of this ship have thus far led to nothing. Hygrometric observations have yielded more promising results. For the nine months of the year during which it was recorded, the general direction of the line of relative humidity on the berth-deck bears a resemblance to that representing the percentage of sick, which is at least remarkable, and is probably due to the fact that for nearly half that time the dampness was sufficiently intense to constitute a morbific agent.* Especial attention is called to the months of July, August, and October, where the lines are most at variance and demand interpretation. The deck is not protected by shellac, and for the month of June, during which it was wet twenty-seven times, the average condition of the air upon it was very near the point of saturation (*i. e.*, 86 per cent.), affording a good opportunity for observation. It is noticeable that the 'sick-line' continued to rise, and did not reach its zenith until a month later, when the line of humidity had already considerably declined. Here, although appreciable diminution of effect is not found immediately to follow diminution of cause, yet it is certain that other undetermined factors were at work. There was a general increase in disease, having no particular tendency, not otherwise accounted for, except towards rheumatism; but in regard to this disease it is interesting to notice that of twenty-five cases in non-syphilitic subjects admitted during the year, one-fifth of them were entered in the medical journal during the first twelve days in July. The fall which occurred in the 'sick-line' in the latter part of July and August was due to the transfer of patients to the hospital at Yokohama, five having been sent on the 30th of July, and two on the 2d of August. It remains now only to notice the divergence of the two lines, which has reached its most marked expression in October. There would be nothing strange in such divergence, even granting that excessive humidity were the chief cause of disease on board ship, for other etiological causes must at times come into play to cause violent oscillations of the 'sick-line.' In the present instance, we may eliminate one such etiological factor by making a correction for several diseases and their sequences. This results in giving us a 'sick-line' which, though more zig-zag, yet runs in a general direction, which from August to September is nearly parallel with the line of humidity, and thus completes an unusual correspondence for the whole nine months recorded. Venereal diseases are the only ones I have ventured to eliminate; but in regard to them I would submit for consideration whether the cause of etiology would not be better served by grouping them with injuries, for, in their origin, at least, both appear to have equally small connection with the hygrometric condition of the berth-deck."

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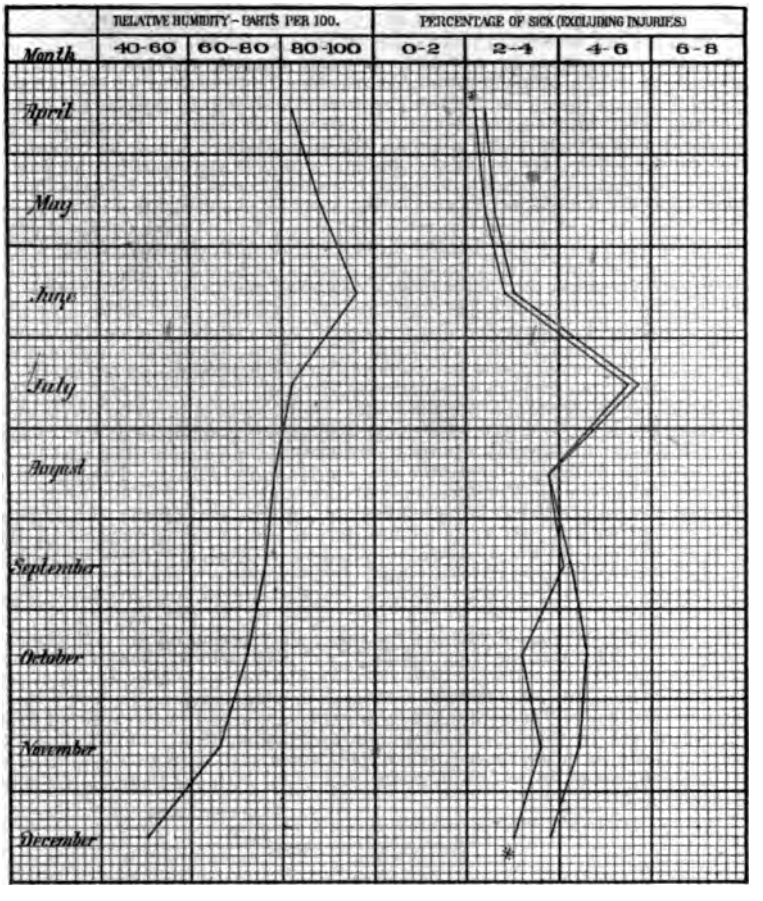
*See appended chart.



* Venereal diseases excluded.

SANITARY CONDITION

OF THE

NORTH ATLANTIC STATION.

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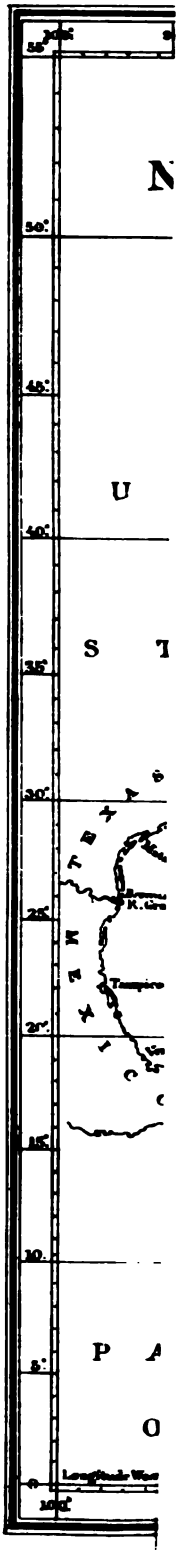
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NORTH ATLANTIC SQUADRON.

The number of vessels employed on the North Atlantic station during the year 1880 was 35, including the Michigan, in service on the northern lakes; four less than the previous year. The force comprised 4 first-rates, 3 second-rates, 12 third-rates, 14 fourth-rates, and 3 surveying vessels. Eleven of the ships were employed as active cruisers, 8 as training-ships, 7 were in ordinary, and 3 employed on the Coast Survey. The returns from 27 ships embraced the whole period of 366 days, while those of the others covered services of varying but shorter durations. The mean strength corrected for time was 4.407, a slight increase over that of 1879.

		Per M.
The total number of admissions, including those remaining from the previous year, was	4,367	= 990.87
Discharged, cured	3,739	= 848.37
Invalided to hospital	471	= 106.86
Invalided from service	29	= 6.58
Died	13	= 2.94
Continued	115	= 25.39

The number of sick-days, or the time lost to the service, amounted to 32.456.

The daily average number of sick was, absolute, 88.67; relative, 20.12; the average number of days under treatment was 7.43.

Compared with the preceding year, it will be seen that there was an increase in the loss of time amounting to 2.310 days; in the daily sick-rate, the very small amount of .12 per M; in the death-rate, of .28 per M, and in the number continued, of 1.17 per M; while, on the other hand, there was a marked decrease of 34.33 per M in the invaliding rate. The average duration of treatment in 1879 was 7.22, while in 1880 it was 7.43.

The sick-rate in the English squadron on this station for the year 1880 was 1204.08 per M; the invaliding rate 26.39 per M; the death-rate 7.43 per M, and the daily average number of sick was 47.98. In the Prussian squadron serving on this station the sick-rate was, absolute, 1593.0; relative, 967.1 per M; the daily average number of sick was, absolute, 42.8; relative, 34.8 per M; and the average duration of treatment, 13.2 days.

The sick-rate per M of the different ships in the squadron, arranged in numerical order, stands thus:

Minnesota	4.02
Constitution	2.87
Nipsic	1.77
Tennessee	1.42
Powhatan	1.24
Constellation	1.22
Portsmouth	1.18
Alliance	1. 9

Kearsarge	1.08
Saratoga	.99
Vandalia	.78
Galena	.60
Michigan	.51
Colorado	.48
Tallapoosa	.47
Dale	.45
Bache	.38
New Hampshire	.37
Franklin	.34
Wabash	.33
Yantic	.32
St. Louis	.31
Despatch	.22
Alarm	.10

The daily average loss of service, distributed among the several classes of disease, is shown in the annexed table, the ratio being per M.

General diseases:

Zymotic	1.51
Constitutional	3.25

Local diseases:

Diseases of the nervous system	.72
Diseases of the eye	.44
Diseases of the ear	.08
Diseases of the teeth	.01
Diseases of the circulatory system	.28
Diseases of the absorbent system	.28
Diseases of the respiratory system	2.59
Diseases of the digestive system	3.01
Diseases of the genito-urinary system	1.44
Diseases of the locomotive system	.12
Diseases of the integumentary system	2.15
Malignant tumors and cysts	.02
Poisons	.14
Violent diseases	3.99

The cases invalided from the service are grouped under the following headings:

General diseases:

	Per M.
Zymotic	1 = .22
Constitutional	6 = 1.36

Local diseases:

Diseases of the nervous system	3 = .68
Diseases of the eye	1 = .22
Diseases of the circulatory system	1 = .22
Diseases of the respiratory system	4 = .90
Diseases of the digestive system	3 = .68
Diseases of the genito-urinary system	3 = .68
Diseases of the integumentary system	3 = .68
Violent diseases	4 = .90

Those sent to the hospitals were for the following classes of disease:

	Per M.
Zymotic diseases	34 = 7.71
Constitutional diseases	126 = 28.58
Diseases of the nervous system	27 = 6.12
Diseases of the eye	16 = 3.63
Diseases of the ear	4 = .90
Diseases of the teeth	1 = .22
Diseases of the circulatory system	18 = 4.09
Diseases of the absorbent system	10 = 2.26
Diseases of the respiratory system	75 = 17.01

Diseases of the digestive system	37	8.39
Diseases of the genito-urinary system	48	10.89
Diseases of the locomotive system	3	.68
Diseases of the integumentary system	15	3.39
Non-malignant tumors and cysts	1	.22
Poisons	3	.68
Violent diseases	52	11.79

The ships furnishing the invalided may be arranged numerically as follows:

Minnesota	84
Constitution	78
Colorado	44
Portsmouth	36
Alliance	25
Vandalia	23
Powhatan	22
Saratoga	22
Constellation	21
Franklin	20
Nipsic	16
Tennessee	15
Wabash	14
St. Louis	12
Alarm	9
Tallapoosa	9
Despatch	8
Passaic	7
Kearsarge	7
Ajax	5
Galena	5
Yantic	3
Catskill	2
Lehigh	2
Mahopac	2
New Hampshire	2
Gedney	1
Bache	1
Dale	1
Manhattan	1
Montauk	1
Rio Bravo	1
Wyandotte	1

The thirteen deaths occurred from the following causes:

Zymotic diseases	2
Diseases of the nervous system	2
Diseases of the ear	1
Diseases of the respiratory system	2
Violence	6

GENERAL DISEASES.

The number of cases included within this division amounted to 963, a ratio per M of 218.51. In 1879 there were 960 cases, the ratio for that year being 235.53 per M, a remarkable correspondence for the two years.

ZYMOTIC GROUP.

There were 463 admissions under this head, giving a ratio of 105.05 per M, and, as compared with 1879, showing a reduction to the extent of 22.85 per M. Of this number, 34 were invalided to hospital, and 1 from the service, and there were 2 deaths, both from enteric fever.

The loss of service from this class amounted to 2,438 days, the daily average number being in the ratio of 1.51 per M. The average duration of treatment was 5.28 days. The cases included within this class were as follows: Epidemic catarrh, 7; mumps, 1; dengue, 5; diphtheria, 2; erysipelas, 6; febricula, 16; simple continued fever, 67; enteric fever, 7; intermittent fever, 265; remittent fever, 56; measles, 4; whooping cough, 2; scarlet fever, 5; vaccina, 19; varioloid, 1.

Catarrhus epidemicus.—The cases reported occurred chiefly on two vessels, the Constitution and the Constellation. The epidemic was of short duration, and caused the loss of only 61 days.

Denguis.—The 5 cases reported of this affection occurred on the New Hampshire, lying in the harbor of Port Royal, S. C. The epidemic was at that time prevalent at Charleston and other cities of that region. Surgeon B. H. Kidder makes the following report of the epidemic:

Dengue became epidemic here in September, at which time it was also prevalent in Charleston, Augusta, and Savannah. Most of the inhabitants of Beaufort and Port Royal were attacked, but the infection did not extend into the surrounding country. The disease disappeared about the middle of November, at which season the malarial poison usually becomes quiescent. I am informed that epidemics of dengue have hitherto visited Beaufort and the neighboring cities at intervals of about twenty or thirty years. During this epidemic the ship's boats visited the neighboring towns freely, and the crews and stewards were subject to no special orders, but went about the streets as usual. With few exceptions, none but officers were allowed to spend the night in the infected towns. About 14 persons belonging on board passed one or more nights in the infected towns, and of this number 9 took dengue. About 14 persons visited the infected towns freely and frequently during the daytime, but did not pass a night there. All these escaped, and so did some 70 of the crew who did not visit the towns at all. No person was attacked who had not passed a night on shore. Dengue attacked 5 of the 6 officers who remained habitually on shore when off duty. Eight of the 9 cases were treated on board; they were not isolated.

The infection of dengue bears a certain resemblance to that of yellow fever. It seems to require a high temperature, and is almost entirely confined to towns. We are to expect an epidemic of dengue in any town having free commercial intercourse with places similarly infected, if situated at no great distance. The infection does not spread *pari passu* with the dispersion of the sick. Nevertheless, we know of no foyers for the dengue infection, except the abodes of dengue patients or the neighborhood of those abodes. To escape an attack we are not always to avoid the sick, but we are always to avoid the places where they contracted the affection.

Diphtheria.—The 2 cases of this disease were returned from the Powhatan, and recovered after an average period of ten days' treatment.

Erysipelas.—One-half the cases reported were on board the Tennessee, and the others occurred on the Saratoga, Vandalia, and Portsmouth, which returned one case each. None were of serious character.

Febricula.—Sixteen cases of this affection were returned, the Minnesota affording 5, nearly one-third of the whole number. The Kearsarge and Tennessee each returned 2, and the Dale and Nipsic each 2. Last year there were 9 cases of this affection.

Febris continua simplex.—There were returned of this disease 67 cases, a ratio of 15.20 per M, and an increase of 5.27 per M over the previous year. With the exception of one case which was invalided to hospital, all recovered on board after an average treatment of 3.83 days. The total loss of service was 257 days. The cases occurred, for the most part, among the apprentices on board the various vessels of the training fleet. The largest number of cases was reported from the Portsmouth, which furnished 24. The next greatest number, 13, occurred on the Constellation, and the remainder were returned in smaller numbers from the other training-ships.

Febris enterica.—Seven cases of this disease were shown in the returns, the ratio per M given being 1.58. As compared with the reports of last year, an increase of 5 cases, and the ratio of 1.10 per M, appear. Three

of the cases occurred on board the Porstmouth, and 2 of them resulted in death. The others were single cases on the Blake, Despatch, Tallapoosa, and Vandalia. The three latter ones were invalided to hospital, and the average period of treatment on board ship was 18.71 days.

Febris intermittens.—Two hundred and sixty-five cases appear under this head, the ratio per M furnished being 59.12, which, compared with last year, shows a reduction of 16.46 per M. The Galena, in service at Norfolk, Va., and the Michigan, on the lakes, show the largest number (27) of these cases; the Constitution returned 22, the Powhatan 20, the Tallapoosa 18, and the Tennessee 17. The average duration of the cases was 4.73 days, and the total loss of service amounted to 1,256 days. Thirteen cases, a ratio of 2.94, were invalided to hospital.

Febris remittens.—The 56 cases of this affection entered on the sick-list were mostly returned from the receiving vessels at Philadelphia and Norfolk, and from those of the training squadron. The ratio per M furnished is 12.70, or very nearly that of last year, being only .58 per M less. Eight cases, giving a ratio of 1.81, were invalided to hospital, and the average duration of the cases on board ship was about 6 days.

Morbilli.—Two vessels, the Vandalia and Saint Louis, supplied the 4 cases returned of this disease, and one was invalided from the latter ship to hospital.

Pertussis.—The 2 cases of whooping-cough occurred on the Constitution, and were soon invalided to hospital. No other cases appeared among the apprentices.

Scarlatina.—The cases of scarlet fever, 5 in number, were also returned from the training-ships, nearly all occurring on the Constitution, and all were invalided to hospital, the progress of the epidemic being thus checked.

Vaccina.—The following tables of vaccination for the squadron are given:

Ships.	Presenting evidence of small-pox.		Presenting evidence of previous vaccination.		No evidence of previous vaccination.		Total.
	Successful.	Unsuccessful.	Successful.	Unsuccessful.	Successful.	Unsuccessful.	
Colorado	5	24	185	216	13	55	498
Constitution	0	4	12	15	15	0	46
Despatch	0	6	0	41	1	7	55
Franklin	0	6	0	231	0	14	251
Kearsarge	12	11	63	68	20	18	192
Michigan	0	18	0	18	0	0	36
New Hampshire	0	0	0	16	0	6	22
Passaic	0	4	2	7	2	1	16
Portsmouth	10	11	84	30	2	19	156
Rio Bravo	0	4	0	10	0	5	19
Saratoga	0	1	7	6	0	0	14
St. Louis	0	0	17	13	3	0	33
Tallapoosa	0	10	10	72	4	8	104
Tennessee	0	26	45	253	25	45	394
Wabash	2	6	184	90	0	0	282
Yantic	0	0	2	24	2	8	36
Total	29	131	611	1,110	87	186	2,154
Per cent. of cases	7.4		79.9		12.7		
Per cent. of successful	18.1		35.5		31.8		33.7

Of the number given above, 19 were sufficiently severe to require a relief from duty, and 2 were invalided to hospitals. The largest number, 7, occurred on the Minnesota.

The following is the report of Surgeon F. M. Dearborne of an epidemic of small-pox which appeared on board the Constitution:

On February 13, a white apprentice boy named Douglass, who had complained of a headache and nausea the evening before, presented himself with a commencing papular eruption upon his forehead, and a very few papules on his body. I considered the case one of varioloides, and sent him to hospital at once. The diagnosis was rendered more difficult by the fact that the boy had not been out of the ship for four weeks, and this was noted upon the hospital ticket. Four days later, on the 17th, a second case occurred in a colored apprentice boy named Reed, who had spent a night in the city on liberty, twelve days before. It now seems nearly certain that Reed conveyed the contagion to Douglass, who, being especially susceptible, was taken ill first, while in Reed's case the disease was slower in developing. This second case was unquestionably variola, and was immediately sent to hospital as such. No other case occurred until February 23, when a colored servant named Holman presented himself with varioloides, and was immediately sent to hospital. He had performed his duty a part of the previous day without complaint, and no febrile symptoms occurred until evening.

Ascertaining, when the second case occurred, that the boy had never been vaccinated, I communicated with the physician in charge of the municipal hospital, and learned that such was the fact regarding Douglass also. These two boys were both enlisted on board the Minnesota on the same day, 15th July, 1880, and were transferred to this ship some time later. Unfortunately, they in some way escaped vaccination when enlisted. The disease was severe in both cases, and in one fatal. The third case, having been vaccinated twice, has had the disease very mildly. The three patients were transferred, officially, to the Philadelphia naval hospital, but were sent directly to the municipal hospital, in accordance with the orders of the commandant of the navy-yard. No further cases have occurred since February 23, and as great care has always been taken to re-vaccinate, with fresh virus, every person enlisted on board the Constitution, without regard to cicatrices of previous vaccination, or the fact that the recruit has had the small-pox, the probability of other cases is greatly reduced.

Varioloides.—The single case of this disease was also reported from the Minnesota, and upon its identification was immediately invalided to hospital.

CONSTITUTIONAL DISEASES.

There appear under this head 500 cases, which is in the ratio of 113.54 per M, showing a reduction of 8.80 per M from the returns of last year. The number invalided was 132, of which 126 were to hospital and 6 from the service. The invaliding ratio shows a falling off from that of last year to the extent of 4.21 per M, and the loss of service was also less by about 200 days. The average duration of the cases was 14.34 days, and the total loss of service 5,249 days. The following were the affections comprised under this head: Adynamia, 65; hydrops, 5; lumbago, 8; myalgia, 7; podagra, 9; rheumatismus, 262; senectus, 3; syphilis, 130; tuberculosis, 3. By far the largest sufferer from this class of diseases was the Minnesota, which returned 70 cases, a ratio of 15 per M.

Adynamia.—There were 65 cases of this disease upon the returns, a ratio of 14.74 per M, a somewhat larger amount than that of last year, which was 12.59 per M. Twenty-three of the cases were invalided to hospital and 2 from the service, a ratio of 7.66 per M. The total loss of service was 874 days, or 13.44 per man. The ships making the largest returns under this head were the Constitution, 12 cases, and the Minnesota, 11 cases.

Anæmia.—The 2 cases of this affection were shown upon the reports of the New Hampshire; one was invalided to hospital and the other returned to duty.

Carcinoma.—The Colorado and Passaic each reported a case of this disease, both being invalided to hospital.

Podagra.—The New Hampshire reported 3 cases of gout, the Blake and St. Louis each 2, and the Tallapoosa and Nipsic each 1. The ratio per M given was 2.04, an increase over that of last year of 1.32 The average loss of service per man was 6.66 days; one case was invalided to hospital.

Rheumatismus.—One hundred and eighteen cases of acute and subacute rheumatism were entered on the list during the year, and 144 cases of chronic rheumatism, making, in all, a ratio of 59.45 per M. As compared with the ratio of last year, these figures show a reduction of 6.85 per M. One case of the chronic, and 1 of the subacute varieties were invalided from the service, and 49 cases in all were transferred to hospital. The average period of treatment was 9.68 and 9.23 days for the acute and subacute forms of the disease respectively, and 7.95 days for chronic rheumatism, making a total loss of service of 2,277 days. The Minnesota contributed the largest number of cases, 39; the Alliance gave 26; the Tennessee 22; the Powhatan 19; the Colorado 15; the Constitution 14; and the Vandalia 12 cases.

Syphilis.—The number of admissions for primary syphilis during the year was 94, and for secondary syphilis 36. These numbers give a case ratio for the former of 21.32 per M, and for the latter of 8.16 per M, showing, in the case of the primary disease, the very slight increase of .33 per M, and in the secondary form, a reduction of 6.13 per M. The total number of days' sickness in the squadron from primary syphilis was 1,361, giving an average period of 14.47 for the treatment of each case, which is an increase of 1.16 days over the average of last year. The average length of treatment in the cases of secondary disease was only 2.16 days, a remarkable reduction of more than 15 days for each case. Regarding the disposition of the cases, 22 of primary and 19 of the secondary cases were invalided to hospital, and 1 of each from the service. The ships returning the largest number of cases were the Powhatan, which reported 16; the Minnesota 14; the Constitution 10; the Alliance 9; and the Portsmouth 7 cases.

LOCAL DISEASES.

The number of cases falling within the division of local diseases during year was 3,404, a ratio per M of 772.40. The increase of the number of cases over that of 1879 was 189, the difference being in the ratio of 43.85 per M.

DISEASES OF THE NERVOUS SYSTEM.

The total number of admissions under this head was 203, which is in the ratio of 46.06 per M, being an increase of 3.43 per M, when compared with the preceding year. There were 30 persons invalided, 27 to hospital and 3 from the service, being in the ratio of 6.80 per M, a considerable decrease from the ratio for 1879, when it was 10.17 per M. The average period of treatment of the cases falling under this head was 5.78 days, so that the total loss of service was 1,175 days. There were 2 deaths from apoplexy. The principal factors of the class were: apoplexiâ, 3 cases; cephalalgia, 71; dementia, 4; epilepsia, 15; insolatio, 7; nausea marina, 55; pleurodynia, 9; vertigo, 8. The ships contributing most largely to the class were the Constitution, which gave 24 cases; the Nipsic, 18 cases; the Tennessee, 17 cases; the Minnesota, 16; and the Vandalia, 10 cases.

Apoplexia.—Two cases of apoplexy occurred on the Alliance, 1 of which was fatal, and the other recovered. A fatal case was also reported from the Ajax.

Cephalalgia.—Seventy-one cases of headache of sufficient severity to require a relief from duty were reported; 2 of them were invalided to hospital, and the remainder returned to duty after an average period of 2.54 days, the total loss being 181 days. The ratio determined by the total of admissions, 16.10 per M, was greater by 5.45 per M than that of last year.

Epilepsia.—There were 15 cases of this affection, the ratio being 3.40 per M, a reduction as compared with last year of 2.17 per M. Five of these cases were invalided to hospital and two from the service, the invaliding ratio being 1.58 per M, or 30 per M less than in 1879. The loss of service reported from these cases amounted to 196 days.

Insolatio.—Seven cases of sunstroke appeared in the returns for 1880, which were confined to two vessels, the Constitution and the Vandalia, the former reporting 2, and the latter 5. Two of the latter were invalided to hospital.

Nausea marina.—Sea-sickness disabled 19 persons for duty, causing a loss of service amounting to 59 days; 1 of the cases was so serious as to render the subject entirely unfit for the service, and he was wholly invalided. The number returned for this affection was more than double that of last year, when but 8 were reported.

Neuralgia.—Under this head 55 cases were reported, showing a ratio of 12.70 per M, which is a reduction from that of last year of 1.59 per M. The average period of treatment was 6.45 days, and the total loss of service was 355 days. Eight cases in all were invalided, 7 to hospital and 1 from the service. The Minnesota returned 9 cases; the Tennessee, 7; the Constitution, 6; and the Colorado, 4.

DISEASES OF THE EYE.

The total number of admissions to the sick-list for ocular affections was 78, which is in the ratio of 17.69 per M, and, when compared with 1879, shows an increase of 5.32 per M. Of this number 17, or 3.85 per M, were invalided to hospital, and 1 from the service for amaurosis. The average duration of treatment was 9.12 days, the total loss of service being 712 days. The following were the principal factors making up the class: amaurosis, 1; conjunctivitis, 5; iritis, 3; keratitis, myopia, pterygium, retentis, and irido, of each, 1; ophthalmia, 9; and ophthalmia gonorrhoïca, 2. The vessels which suffered most largely from these troubles were the Minnesota, which reported 17 cases; the Tennessee, 11 cases; the Constitution, 9 cases; and the Powhatan, 7 cases.

Amaurosis.—The single case of this affection reported occurred on the Colorado, and it was invalided from the service.

Conjunctivitis.—This affection contributed more than half the whole number of the class, 52 cases having been returned, a ratio of 11.80 per M. Comparing this ratio with that of the previous year, it will be found that the cases of this disease were more numerous, in the ratio of 3.33 per M; 6 of the cases were invalided to hospital, which is the same number as last year. The total loss of service was 436 days, or 8.38 per man. The cases occurred chiefly on the Tennessee, Minnesota, Constitution, and Powhatan.

Ophthalmia.—The cases of this affection were, with a single exception, reported from two ships, the Constitution and the Tennessee. Nine cases in all were reported, treble the number of last year; 1 of them was invalided to hospital. The Alarm had 2 cases of gonorrhœal ophthalmia, which were also invalided to hospital.

DISEASES OF THE EAR.

The cases comprised within this class were otalgia, 2; otitis, 14; otorrhœa, 1; and surditas, 4; making a total of 21, which is in the ratio of 4.76 per M, a decrease from that of last year of .71 per M. The total loss of service was 135 days, an average of 6.42 per case. Four cases in all were invalided, 1 of otitis and 3 of surditas, which were transferred to hospital. One death occurred on board the Constitution from otitis.

DISEASES OF THE CIRCULATORY SYSTEM.

Under this head appear 34 cases of disease, comprising the following aneurism, angina pectoris, hypertrophy of the heart, of each 1; valvular disease of the heart, 6; palpitation, 17; pericarditis, 3; syncope, 2; varix, 3. The ratio contributed by these cases is 7.71 per M, which is somewhat smaller than that of last year, when it was 9.93 per M. Nearly one-half the cases, or 1 , were invalided, the ratio amounting to 4.31 per M, a slightly smaller one than was given in 1879. One case was invalided from the service, and all the others to hospital. The aggregate loss of service was 467 days, the average per case being 10.86 days. The training ships furnished a large percentage of these cases, 5 being reported from the Constitution (all of which were invalided), 5 from the Minnesota, 3 from the Saratoga and New Hampshire, respectively, while the others occurred in smaller numbers on the other ships. The single case of aneurism occurred on the Alliance and was invalided to hospital.

DISEASES OF THE ABSORBENT SYSTEM.

There appear under this head 42 cases of adenitis, and 1 of lymphangitis, making a ratio of 9.74 per M, which is very nearly the same as last year. Of this number 10 were invalided to hospital, and the total loss of service from these cases amounted to 467 days.

DISEASES OF THE RESPIRATORY ORGANS.

Comprised under this head there were returned 511 cases of disease, which is in the ratio of 115.94 per M. Comparing this with the returns of 1879, there appears a reduction of 10.02 per M, while in the invaliding rate the reduction amounts to 7.04 per M. Of the 39 invalided, 4 were from the service and the remainder to hospital. There were 2 deaths from pneumonia. The aggregate loss of service amounted to 4,193 days, equaling 8.20 days per man. Comprised in this class were 408 cases of bronchial and catarrhal troubles, 18 cases of phthisis pulmonalis, 21 of pleuritis, and 33 of pneumonia. The ship contributing most largely to this class was the Minnesota, which reported 111 cases, while the following numbers were reported from the ships mentioned: Tennessee, 62; Constitution, 46; Vandalia, 32; Colorado, 24; Saratoga, 19; Nipsic, 18; Portsmouth, 15.

Bronchitis.—There were admitted during the year, for this affection, 167 cases, of which 142 were acute in character, and 25 chronic, making in all a ratio of 36.57, which is less by 1.31 per M than that for last year. One case of each variety was invalided from the service, while 27 were transferred to hospital. The loss of service was large, amounting to 1,622 sick-days. The Vandalia reported the largest number of cases, while the vessels of the training fleet contributed a large proportion.

Catarrhus.—Two hundred and forty-one cases of this affection were returned, of which 5 were invalided to hospital. The ratio per M is 54.68, which is less by 8.56 than that of last year. By far the largest number occurred on the Minnesota, which reported 73 cases. The other training ships appear to have been remarkably free from bronchial, as

well as catarrhal affections, the Portsmouth returning but 7 in all, and the Saratoga but 14.

Phthisis pneumonica.—Eighteen cases of the chronic and acute varieties of this affection were tabulated, within 1 of the number of last year. They come chiefly from the Constitution, Franklin, Portsmouth, Kearsarge, and Gedney. Fifteen cases were invalided to hospital, mostly from the three first-named ships. The total loss of service amounted to 198 days.

Pleuritis.—The returns included 21 cases of this disease, 9 of which were invalided to hospital. The cases were mostly reported from the Colorado, Minnesota, Saratoga, and St. Louis. The ratio per M, 4.76, was less by .81 per M than that of last year.

Pneumonia.—Thirty-three cases of pneumonia came under observation, a ratio of 7.48, which is 1.18 per M greater than last year. Seven cases were invalided to hospital, 2 from the service, and 2 died. The Minnesota contributed the large number of 19 cases, and there were 3 on the Tennessee and Constitution, respectively. The 2 deaths occurred on the Tennessee and Catskill. The amount of the loss of service was 853 days, which is an average period of 25.84 days.

DISEASES OF THE DIGESTIVE SYSTEM.

The number of cases returned under this head amounted to 1,007, which is in the ratio of 228.48 per M, and, compared with the return of last year, shows an increase of 31 per M. Three cases were invalided from the service, and 37 to hospital, the invaliding ratio being 9.07, a reduction from last year of 15.88 per M. The average period of treatment was about 3 days, making an aggregate loss of 4,863 days. The largest factor in the class was acute diarrhœa, which contributed 284 cases, this number being 40 in excess of that of last year. Next in order of frequency was tonsillitis, which contributed 242 cases, while in 1879 there were 192. There were 166 cases of pharyngitis, more than double the number of the preceding year, when but 64 were reported. The various other diseases of the class seemed to prevail to about the same extent as last year. The ships presenting the largest percentage of these affections were, as was to be expected, the vessels of the training fleet. The Minnesota contributed 336 cases, a ratio of 76 per M; the Constitution 86 cases, or 19 per M; the Portsmouth 51 cases, 11 per M; and the Saratoga 36 cases. Of the ships in general service, the Tennessee afforded the largest number, 58, in the ratio of 13 per M.

DISEASES OF THE GENITO-URINARY SYSTEM.

There were entered upon the sick-list of the squadron 207 cases of these affections, a ratio per M of 46.96, a falling off from that of the antecedent year to the extent of 5.57 per M. Fifty-one were invalided, 3 from the service, and the others to hospital, the invaliding ratio being 11.57 per M, .54 per M less than in 1879. The loss of service equaled 2,340 days, 555 days less than the amount of last year. The average period of treatment was also less, being 11.30, a reduction of 1.70 days. The chief factors of the class were chancroides, enuresis, gonorrhœa, orchitis, and urethræ strictura.

Chancroides.—Twenty-two cases of chancroides were returned, in the ratio of 4.99 per M, which is larger than that of last year by 2.09 per M. The cases were cured on board, one only remaining on the list at the expiration of the year. The average period of treatment was 17.84 days, and the total loss of service was 375 days. The ships contributing the largest numbers were the Alliance, which reported 6, the Constitution and the Tennessee, each of which returned 5.

Gonorrhœa.—The number of admissions for this disease was 84, which gives a ratio of 19.05, a considerable falling off from that of last year, which was 27.13 per M. The cases were all returned to duty, with the exception of 19 invalided, and 3 remaining. The invaliding rate was rather larger than in 1879, the difference being in the ratio of 1.17 per M. The loss of service was 1,037 days, an average of 12.34 days per man, the reduction in the former being a little over 500 days. The training ships gave the largest number of cases; there were on the Minnesota 27, on the Saratoga 9. Constitution and Portsmouth each 3. The Tennessee and Powhatan, the largest vessels of the squadron, reported but 3 and 4 cases respectively.

Orchitis.—The number reported of this disease almost corresponds to that of last year, the ratio for 1880 being smaller by 1.11 per M. The admissions during the year were 41, in the ratio of 9.30 per M, of which 2 cases were invalided to hospital, 2 remaining for treatment at the end of the year. The loss of service amounted to 468 days.

Urethræ stricture.—Sixteen cases of urethal stricture came under treatment, the ratio per M being 3.63, which is .92 smaller than that of the preceding year. Nearly one-half the cases, or 7, were invalided, 2 from the service, and 5 to hospital. The invaliding rate was, however, smaller by 1.32 per M than that of last year.

DISEASES OF THE LOCOMOTIVE SYSTEM.

The 9 cases entered under this head were as follows: arthritis, hydrops, articulorum, necrosis, ostitis, and periostitis, of each, 1; synovitis, 4. These numbers are considerably smaller than in 1879, when 19 cases were, in all, reported, the reduction being 2.55 per M.

DISEASES OF THE INTEGUMENTARY SYSTEM.

The returns included 417 cases of skin diseases, a ratio of 94.61, and an increase of 6.68 per M for the year 1880. Fifteen were invalided to hospitals, and 3 from the service, making a ratio of 4.07 per M, or 1 per M less than that of the previous year. The average duration of treatment was 8.32 days, and the total number of sick-days 3,473. The principal factors in the class were abscesses, anthrax, eczema, furunculus, paronychia, and ulcus, in nearly all of which there was an increase since the preceding year. The Constitution contributed the largest number of cases, 53; and there were from the Saratoga 43, from the Portsmouth 38, from the Tennessee 38, and from the Powhatan 26. It will thus be seen that the apprentices on the training ships contributed most largely to this class.

POISONS.

Eighty persons came upon the sick-list laboring under the various results of alcoholic poisoning, and three were admitted with poisoned wounds. The ratio given by these cases was 18.83 per M, somewhat smaller than last year, when it was 20.59. Two cases of alcoholism and 1 of delirium tremens were invalided to hospital. The following ships reported the largest number of cases: Alliance 13, Kearsarge 15, Minnesota 12, Powhatan 8. The total loss of service amounted to 205 days.

VIOLENT DISEASES AND DEATHS.

An aggregate of 775 cases is included under this head, a ratio per M of 175.84, and a reduction from the previous year of 28.13 per M. Fifty-six cases were invalided, the ratio being 12.69 per M, or 9.08 less than in 1879. There were 6 deaths, a ratio per M of 1.36. The total loss of service was 6,438 days, greater only by 28 days than that of last year, and the average duration of the cases was 8.30 days. The deaths occurred from concussion of the brain, contusion, fracture, and drowning.

TABLE I.—Showing the force on each ship, the number admitted and discharged, number of days under treatment, and average per M of force on the North Atlantic Station.

Vessels.	Strength.	Steerage accommodations for men.	Admitted						Number invalided.		Remained.	Total.	Cases.	Constant steam of days under treatment.	Average number of cases under treatment.	Admissions.	Daily average number sick on board.	Per M of strength.	Number admitted per M of strength.
			First half year.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.											
Alarm, 4th rate, 311 tons, torpedo ram, screw; service, 366 days	95	95		13		13		13				13	24	1,174	3.2	13	0.13	1.36	13.68
Alliance, 3d rate, 615 tons, wood, screw; service, 366 days	163	163	3	10	76	87		90	3	3		93	1,007	1,007	2.7	93	0.57	0.57	57.06
Ajax, 4th rate, 830 tons, iron-clad, screw; service, 366 days	110	110		2		2		2				2	2	2	0.005	2	0.018	0.018	18.18
Bache, Coast Survey vessel; service, 366 days	41	41	1	2		2		3				3	3	3	0.008	3	0.073	0.073	73.17
Blake, Coast Survey vessel; service, 366 days	18	18		1		1		1				1	1	1	0.002	1	0.055	0.055	55.55
Catskill, 4th rate, 496 tons, iron-clad, screw; service, 366 days	17	17																	
Colorado, 1st rate, 3,042 tons, wood, screw; service, 366 days	550	550	5	53	84	137		142	5	5		147	1,000	44,000	120	147	0.267	0.267	267.27
Constitution, 3d rate, 1,326 tons, wood, sails; service, 366	309	309	9	16	93	74	19	202	9	9		211	1,000	77	0.21	211	0.683	0.683	683.17
Constellation, 3d rate, 1,326 tons, wood, sails; service, 183 days	227	0	4	10	47	105		105	4	4		109	148	148	0.40	109	0.480	0.480	480.17
Dale, 3d rate, 320 tons, wood, sails; service, 61 days	110				14	39		39				39	49	49	0.13	39	0.354	0.354	354.54
Despatch, 4th rate, 700 tons, wood, screw; service, 183 days	81	33			6			10				10	98	98	0.26	10	0.123	0.123	123.45
Franklin, 1st rate, 3,173 tons, wood, screw; service, 366 days	226	226	1	33	31	34	34	34				34	70	70	0.19	34	0.150	0.150	150.44
Galena, 3d rate, 910 tons, wood, screw; service, 128 days	221	77						55				55	74	74	0.20	55	0.248	0.248	248.41
Gedney, Coast Survey vessel; service, 366 days	84	84						11				11	22	22	0.06	11	0.130	0.130	130.95
Kearsarge, 3d rate, 695 tons, wood, screw; service, 366 days	190	105	4	60	61	82	24	71	2	2		73	91	1	0.002	73	0.384	0.384	384.21
Lehigh, 4th rate, 496 tons, iron-clad, screw; service, 366 days	16	16	1	3	0	1	1	1				1	1	1	0.002	1	0.062	0.062	62.50
Mahopac, 4th rate, 550 tons, iron-clad, screw; service, 366 days	16	16		2		1	2	2				2	2	2	0.005	2	0.125	0.125	125.00
Manhattan, 4th rate, 550 tons, iron-clad, screw; service, 366 days	16	16		1	1			1				1	1	1	0.002	1	0.062	0.062	62.50

Michigan, 4th rate, 450 tons, iron, paddle; service, 366 days	100	100	2	27	26	20	21	96	95	....	....	....	95	1	829	8.63	2.26	1.51	21.78
Minnesota, 1st rate, 3,000 tons, wood, screw; service, 366 days	512	512	27	229	98	176	291	821	715	78	6	....	799	22	6,457	7.86	17.64	4.02	186.29
Montauk, 4th rate, 496 tons, iron-clad, screw; service, 366 days	20	20		2	2	.....	.....	4	3	1	...	...	4	....	20	5	0.05	0.01	0.90
New Hampshire, 2d rate, 2,600 tons, wood, sails; service, 366 days	108	108		15	13	20	29	78	73	2	...	....	75	3	607	7.78	1.65	0.37	17.91
Nipsic, 3d rate, 695 tons, wood, screw; service, 91 days	183	45		98	..	.....	.....	102	75	16	..	....	91	11	714	7	7.84	1.77	23.14
Passaic, 4th rate, 496 tons, iron-clad, screw; service, 366 days	56	56		2	7	8	5	22	15	7	....	....	22	...	78	3.53	0.21	0.4	4.99
Portsmouth, 3d rate, 846 tons, wood, sails; service, 366 days	234	234		46	61	55	59	221	177	29	7	2	215	6	1,919	8.68	5.24	1.18	50.14
Powhatan, 2d rate, 2,182 tons, wood, paddle; service, 366 days	252	252	5	48	34	87	103	277	240	22	....	....	262	15	2,012	7.26	5.49	5.24	62.85
Rio Bravo, 4th rate, 325 tons, wood, paddle; service, 177 days	48	23	....	25	22	.....	.....	47	46	1	....	....	47	....	239	5.08	1.35	0.30	10.66
Saratoga, 3d rate, 757 tons, wood, sails; service, 366 days	275	275	....	40	19	56	42	157	129	22	....	2	153	4	1,610	10.24	4.39	0.99	35.62
St. Louis, 3d rate, 431 tons, wood, sails; service, 366 days	87	87	....	13	10	28	19	70	56	11	1	....	68	2	502	7.17	1.37	0.31	15.88
Tallapoosa, 4th rate, 650 tons, wood, paddle; service, 366 days	125	125	4	31	43	36	22	136	127	9	....	....	136	....	769	5.65	2.10	0.47	30.86
Tennessee, 2d rate, 2,840 tons, screw; service, 366 days	416	416	9	111	73	92	57	342	321	15	....	1	337	5	2,306	6.74	6.80	1.42	77.60
Vandalia, 3d rate, 981 tons, wood, screw; service, 366 days	215	215	2	26	31	60	53	172	147	19	4	....	170	2	1,260	7.32	3.44	0.78	39.02
Wabash, 1st rate, 3,000 tons, wood, screw; service, 366 days	198	198	1	29	16	15	21	82	67	10	4	...	81	1	540	6.58	1.47	0.33	18.00
Wyandotte, 4th rate, 550 tons, iron-clad, screw; service, 366 days	20	20	....	.....	....	1	.....	1	.....	1	....	....	1	...	2	2	.....	.....	0.22
Yantic, 3d rate, 410 tons, screw; service, 91 days	143	35	....	.....	..	.....	26	26	23	3	....	....	26	....	131	5.03	1.43	0.32	5.89
Total	5,078	4,407	81	1,088	865	1,119	1,214	4,367	3,739	471	29	13	4,252	115	32,456	7.43	88.67	20.12	990.92

Rheumatismus acutus	92	20.87	891	2.43	.55	9.68	77	17.47	11	2.50	.....	.....	.....	.....	5
Rheumatismus chronicus	144	32.67	1,146	3.13	.71	7.95	107	24.27	31	7.03	1	.22	.....	.....	4
Rheumatismus subacutus	26	5.89	240	.65	.14	9.23	17	3.85	8	1.81	1	.22	.....	.....	.....
Scrofula	1	.22	13	.03	.....	13	1	.22	.....	.....	.....	.....	.....	.....	.....
Senectus	3	.68	31	.08	.01	10.33	.....	.....	3	.68	.....	.....	.....	.....	.....
Syphilis primitiva	94	21.32	1,361	3.71	.84	14.47	68	15.42	22	4.99	1	.22	.....	.....	3
Syphilis consecutiva	36	8.16	438	1.19	.27	2.16	16	3.63	19	4.31	1	.22	.....	.....	.....
Torticollis	1	.22	3	.....	.....	3	1	.22	.....	.....	.....	.....	.....	.....	.....
Tuberculosis	3	.68	28	.07	.01	9.33	.....	.....	3	.28	.....	.....	.....	.....	.....
Total	500	113.45	5,249	14.34	3.25	14.34	352	79.86	126	28.58	6	1.36	.....	.....	16
LOCAL DISEASES.															
1.—Diseases of the nervous system.															
Apoplexia	3	.68	7	.01	.....	2.33	1	.22	.....	.....	.....	.....	2	.45	.....
Asthenia	1	.22	1	.....	.....	1	1	.22	.....	.....	.....	.....	.....	.....	.....
Cephalalgia	71	16.10	181	.49	.11	2.54	69	15.65	2	.45	.....	.....	.....	.....	.....
Dementia	4	.90	81	.22	.04	20.25	.....	.....	4	.90	.....	.....	.....	.....	.....
Epilepsia	15	3.40	196	.53	.12	13.06	8	1.81	5	1.13	2	.45	.....	.....	.....
Insolatio	7	1.58	41	.11	.02	5.85	5	1.13	2	.45	.....	.....	.....	.....	.....
Melancholia	3	.68	21	.05	.01	7	1	.22	2	.45	.....	.....	.....	.....	.....
Meningitis	1	.22	10	.02	.....	10	1	.22	.....	.....	.....	.....	.....	.....	.....
Monomania	2	.45	41	.11	.02	20.5	1	.22	1	.22	.....	.....	.....	.....	.....
Nausea marina	19	4.31	59	.16	.03	3.10	18	4.09	1	.22	.....	.....	.....	.....	.....
Neuralgia	55	12.70	355	.96	.21	6.45	47	10.66	7	1.58	1	.22	.....	.....	.....
Nostalgia	1	.22	2	.....	.....	2	1	.22	.....	.....	.....	.....	.....	.....	.....
Paralysis	2	.45	43	.11	.02	21.5	1	.22	1	.22	.....	.....	.....	.....	.....
Pleurodynia	9	2.04	46	.12	.02	5.11	8	1.81	1	.22	.....	.....	.....	.....	.....
Sciatica	1	.22	3	.....	.....	3	1	.22	.....	.....	.....	.....	.....	.....	.....
Tetanus	1	.22	62	.16	.03	62	.....	.....	1	.22	.....	.....	.....	.....	.....
Vertigo	8	1.81	26	.07	.01	3.25	8	1.81	.....	.....	.....	.....	.....	.....	.....
Total	203	46.06	1,175	3.21	.72	5.78	171	38.79	27	6.12	3	.68	2	.45	.....
2.—Diseases of the eye.															
Amaurosis	2	.45	11	.03	.....	5.5	.....	.....	1	.22	1	.22	.....	.....	.....
Conjunctivitis	52	11.80	436	1.19	.27	8.38	45	10.21	6	1.36	.....	.....	.....	.....	1
Hemeralopia	1	.22	2	.....	.....	2	.....	.....	1	.22	.....	.....	.....	.....	.....
Hordeolum	2	.45	3	.....	.....	1.5	2	.45	.....	.....	.....	.....	.....	.....	.....
Iritis	3	.68	92	.25	.05	30.66	2	.45	1	.22	.....	.....	.....	.....	.....
Keratitis	1	.22	21	.05	.01	21	1	.22	.....	.....	.....	.....	.....	.....	.....
Myopia	1	.22	27	.07	.01	27	.....	.....	1	.22	.....	.....	.....	.....	.....
Ophthalmia	9	2.04	69	.18	.04	7.66	8	1.81	1	.22	.....	.....	.....	.....	.....
Ophthalmia gonorrhœica	2	.45	4	.01	.....	2	.....	.....	2	.45	.....	.....	.....	.....	.....
Pterygium	1	.22	1	.....	.....	1	.....	.....	1	.22	.....	.....	.....	.....	.....
Retinitis	1	.22	2	.....	.....	2	.....	.....	1	.22	.....	.....	.....	.....	.....
Sclerotitis	2	.45	37	.10	.02	18.5	2	.45	.....	.....	.....	.....	.....	.....	.....
Iridio	1	.22	7	.01	.....	7	.....	.....	1	.22	.....	.....	.....	.....	.....
Total	78	17.69	712	1.94	.44	9.12	60	13.61	16	3.63	1	.22	.....	.....	1

Lymphangitis	1	.22	9	.02	.....	9	1	.22	.....	.....	.....	.....	.....	.....	.....
Total	43	9.74	467	1.27	.28	10.86	33	7.48	10	2.26	.....	.....	.....	.....	.....
7.—Diseases of the respiratory system.															
Apnœa	1	.22	1	.....	.....	1	1	.22	.....	.....	.....	.....	.....	.....	.....
Asthma	6	1.36	39	.10	.02	6.5	3	.68	3	.68	.....	.....	.....	.....	.....
Bronchitis acuta	142	32.21	1,192	3.25	.73	8.39	119	27	14	3.17	1	.22	.....	.....	8
Bronchitis chronica	25	5.67	430	1.17	.26	17.2	11	2.49	13	2.95	1	.22	.....	.....	.....
Catarrhus	189	42.88	771	2.10	.47	4.07	172	39.02	1	.22	.....	.....	.....	.....	16
Catarrhus bronchialis	52	11.80	330	.90	.20	6.32	48	10.89	4	.90	.....	.....	.....	.....	.....
Congestio pulmonalis	1	.22	13	.03	.....	13	1	.22	.....	.....	.....	.....	.....	.....	.....
Hæmoptysis	12	2.72	86	.23	.05	7.16	4	.90	8	1.81	.....	.....	.....	.....	.....
Laryngitis	11	2.49	84	.22	.04	7.63	10	2.26	1	.22	.....	.....	.....	.....	.....
Phthisis pneumonica acuta	6	1.36	20	.05	.01	3.33	1	.22	5	1.13	.....	.....	.....	.....	.....
Phthisis pneumonica chronica	12	2.72	175	.47	.10	14.58	2	.45	10	2.26	.....	.....	.....	.....	.....
Pleuritis	21	4.76	199	.54	.12	9.47	11	2.49	9	2.04	.....	.....	.....	.....	1
Pneumonia	33	7.48	853	2.33	.52	25.84	21	4.76	7	1.58	2	.45	2	.45	1
Total	511	115.94	4,193	11.45	2.59	8.20	404	91.66	75	17.01	4	.90	2	.45	26
8.—Diseases of the digestive system.															
Cholera morbus	78	17.69	233	.63	.14	2.98	78	17.69	.....	.....	.....	.....	.....	.....	.....
Colica	55	12.47	184	.50	.11	3.34	54	12.25	1	.22	.....	.....	.....	.....	.....
Constipatio	40	9.07	101	.27	.06	2.52	39	8.84	1	.22	.....	.....	.....	.....	.....
Diarrhœa acuta	284	64.43	1,192	3.25	.73	4.19	277	62.85	2	.45	1	.22	.....	.....	4
Diarrhœa chronica	8	1.81	86	.23	.05	10.75	4	.90	3	.68	.....	.....	.....	.....	1
Dysenteria acuta	29	6.58	146	.39	.08	5.03	27	6.22	2	.45	.....	.....	.....	.....	.....
Dysenteria chronica	1	.22	8	.02	.....	8	1	.22	.....	.....	.....	.....	.....	.....	.....
Dyspepsia	25	5.67	156	.42	.09	6.24	22	4.99	3	.68	.....	.....	.....	.....	.....
Enteritis	2	.45	22	.05	.01	11	1	.22	1	.22	.....	.....	.....	.....	.....
Fauces ulcerosa	3	.68	22	.05	.01	7.33	2	.45	.....	.....	.....	.....	.....	.....	1
Fistula in ano	4	.90	25	.06	.01	6.25	1	.22	2	.45	1	.22	.....	.....	.....
Gastritis	5	1.13	28	.07	.01	5.6	5	1.13	.....	.....	.....	.....	.....	.....	.....
Gastrodynia	2	.45	11	.03	.....	5 5	2	.45	.....	.....	.....	.....	.....	.....	.....
Hæmorrhois	30	6.80	242	.66	.14	8.06	20	4.53	10	2.26	.....	.....	.....	.....	.....
Hepatitis acuta	1	.22	18	.04	.....	18	1	.22	.....	.....	.....	.....	.....	.....	.....
Hepatitis chronica	1	.22	6	.01	.....	6	.....	.....	1	.22	.....	.....	.....	.....	.....
Hernia	6	1.36	52	.14	.03	8.66	5	1.13	1	.22	.....	.....	.....	.....	.....
Icterus	12	2.72	87	.23	.05	7.25	11	2.49	1	.22	.....	.....	.....	.....	.....
Perityphlitis	1	.22	11	.03	.....	.11	.....	.....	.....	.....	1	.22	.....	.....	.....
Pharyngitis	166	37.66	899	2.45	.55	5.41	160	36.30	2	.45	.....	.....	.....	.....	4
Splenitis	2	.45	16	.04	.....	8	2	.45	.....	.....	.....	.....	.....	.....	.....
Stomatitis	4	.90	16	.04	.....	4	4	.90	.....	.....	.....	.....	.....	.....	.....
Tonsillitis	242	54.90	1,260	3.44	.78	5.20	222	50.37	7	1.58	.....	.....	.....	.....	13
Tænia	1	.22	3	.....	.....	3	1	.22	.....	.....	.....	.....	.....	.....	.....
Vermes	5	1.13	39	.10	.02	7.8	5	1.13	.....	.....	.....	.....	.....	.....	.....
Total	1,007	228.48	4,863	13.28	3.01	4.82	944	214.19	37	8.39	3	.68	.....	.....	23

TABLE I.—*Showing the force on each ship, the number admitted and discharged, number of days under treatment, and average per M of force on the North Atlantic Station.*

Vessels.	Strength.	Strength corrected for time.	Admitted.						Discharged.					Continued.	Number of sick-days.	Average number of days under treatment.	Daily average number of sick.		Number admitted per M of strength.
			From last year.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.	Cured.	Invalided.		Died.	Total.				Absolute.	Per M of strength.	
										H.	S.								
Alarm, 4th rate, 311 tons, torpedo-ram, screw; service, 366 days	25	25	....	13	18	19	13	63	54	9	....	....	63	....	173	2.74	0.47	0.10	14.29
Alliance, 3d rate, 615 tons, wood, screw; service, 366 days	163	163	3	39	78	57	85	262	228	5	....	2	255	7	1,767	6.74	4.82	1.09	59.45
Ajax, 4th rate, 550 tons, iron-clad, screw; service, 366 days	30	30	...	3	7	8	4	22	16	5	....	1	22	....	84	3.81	0.22	0.04	4.99
Bache, Coast Survey vessel; service, 366 days	41	41	1	13	5	8	16	43	42	1	....	...	43	....	624	14.51	1.70	0.38	9.75
Blake, Coast Survey vessel; service, 366 days	18	18	....	2	....	1	.....	3	3	....	....	....	3	....	77	25.66	0.21	0.04	0.68
Catskill, 4th rate, 496 tons, iron-clad, screw service, 366 days	17	17	....	3	5	4	2	14	11	2	..	1	14	....	52	3.71	0.14	0.03	3.17
Colorado, 1st rate, 3,032 tons, wood, screw; service, 366 days	330	330	3	51	34	16	62	166	103	44	....	1	148	18	788	4.74	2.15	0.48	37.66
Constitution, 3d rate, 1, 335 tons, wood, sails service, 366	309	309	9	116	96	74	119	414	327	77	1	1	406	8	4,644	11.21	12.68	2.87	93.94
Constellation, 3d rate, 1,236 tons, wood, sails; service, 193 days	227	119	4	10	47	105	.....	166	145	17	4	....	166	....	1,043	6.28	5.40	1.22	37.66
Dale, 3d rate, 320 tons, wood, sails; service, 61 days	119	19	...	.....	14	29	.....	43	42	..	1	....	43	....	123	2.86	2.01	0.45	9.75
Despatch, 4th rate, 730 tons, wood, screw; service, 153 days	81	33	....	.....	6	18	10	34	26	8	....	....	34	...	152	4.47	0.99	0.22	7.71
Franklin, 1st rate, 3,173 tons, wood, screw; service, 366 days	228	228	1	22	18	24	14	79	58	19	1	1	79	....	566	7.16	1.54	0.34	17.92
Galena, 3d rate, 910 tons, wood, screw; service, 128 days	221	77	...	.....	....	18	55	73	64	5	....	....	69	4	344	4.71	2.68	0.60	16.56
Gedney, Coast Survey vessel; service, 366 days	34	34	....	.....	11	.....	11	22						....	154	7	0.42	0.09	4.99
Kearsarge, 3d rate, 695 tons, wood, screw; service, 366 days	195	195	4	68	61	82	71	286	21	1	....	....	22	6	1,752	6.12	4.78	1.08	64.89
Lehigh, 4th rate, 496 tons, iron-clad, screw; service, 366 days	16	16	1	3	9	1	1	15	272	7	....	1	280						
Mahopac, 4th rate, 550 tons, iron-clad, screw; service, 366 days	16	16	....	2	....	1	2	5	13	2	....	....	15	....	83	5.53	0.22	0.04	3.40
Manhattan, 4th rate, 550 tons, iron-clad, screw; service, 366 days	16	16	....	1	1	.....	1	3	2	1	....	....	3	....	9	3	0.02	.....	.68

11.—*Diseases of the integumentary system.*															
Abscessus	101	22.91	946	2.58	.58	9.36	93	21.10	7	1.58	1	.22			
Acne	1	.22	4	.01		4	1	.22							
Anthrax	12	2.72	125	.34	.07	10.41	12	2.72							
Cellulitis	2	.45	9	.02		4.5	1	.22			1	.22			
Dermatitis	1	.22	2			2	1	.22							
Ecthyma	1	.22	11	.03		11	1	.22							
Eczema	18	4.09	237	.64	.14	13.16	14	3.17	4	.90					
Epithelioma	1	.22	11	.03		11					1	.22			
Erythema	7	1.58	17	.04		2.42	7	1.58							
Furunculus	182	41.56	1,098	3.00	68	6.03	178	40.65	1	.22					3
Herpes	2	.45	15	.04		7.5	2	.45							
Impetigo	3	.68	22	.05	.01	7.33	3	.68							
Lichen	1	.22	4	.01		4	1	.22							
Onychia	2	.45	14	.03		7	1	.22							1
Paronychia	31	7.02	296	.80	.18	9.54	31	7.02							
Purpura	1	.22	6	.01		6	1	.22							
Psoriasis	2	.45	25	.06	.01	12.5	2	.45							
Tinea	4	.90	32	.08	.01	8	3	.68							1
Unguis involutis	6	1.36	73	.19	.04	12.16	5	1.13	1	.22					
Ulcus	37	8.38	521	1.42	.32	14.08	31	7.02	2	.45					4
Urticaria	2	.45	5	.01		2.5	2	.45							
Total	417	94.61	3,473	9.48	2.15	8.32	390	88.49	15	3.39	3	.68			9
12.—*Non-malignant tumors and cysts.*															
Hæmatoma	1	.22	15	.04		15	1	.22							
Lipoma	1	.22	11	.03		11			1	.22					
Sarcoma	1	.22	18	.04		18			1	.22					
Total	3	.68	44	.12	.02	14.66	1	.22	2	.45					
13.—*Poisons.*															
Alcoholismus	50	11.34	151	.41	.09	3.02	48	10.89	2	.45					
Delirium tremens	3	.68	10	.02		3.33	2	.45	1	.22					
Ebriositas	27	6.22	60	.16	.03	2.22	27	6.22							
Vulnus venenatum	3	.68	12	.03		4	3	.68							
Venenatis	1	.23	9	.02		9	1	.22							
Total	84	19.05	242	.64	.14	2.88	81	18.37	3	.68					
14.—*Violent diseases and deaths.*															
Abrasio	58	13.16	485	1.32	.29	8.36	57	12.93	1	.22					
Ambustio	34	7.71	254	.69	.15	7.47	29	6.58	2	.45					3
Concussio cerebri	4	.90	33	.09	.02	8.25	1	.22	2	.45			1	.22	
Congelatio	9	2.04	34	.09	.02	3.77	1	.22							8
Contusio	203	46.06	1,502	4.10	.13	7.39	189	42.88	6	1.36	2	.45	1	.22	5
Fractura	34	7.71	486	1.32	.29	14.29	14	3.17	17	3.85			1	.22	2

TABLE II.—*Showing the number of cases, the discharged, the invalided, and the dead, for each disease, and their ratio per* 1,000 *of force on the North Atlantic Station.*

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Continued.
	Number.	Per 1,000 of force.		Absolute.	Per 1,000 of force.		Number.	Per 1,000 of force.	To hospital.		From service.		Number.	Per 1,000 of force.	
									Number.	Per 1,000 of force.	Number.	Per 1,000 of force.			
GENERAL DISEASES.															
1.—Zymotic diseases.															
Catarrhus epidemicus	7	1.58	61	.16	.03	8.71	7	1.58							
Cynanche parotidea	1	.22	3			3	1	.22							
Denguis	5	1.13	32	.08	.02	6.4	5	1.13							
Diphtheria	2	.45	21	.05	.01	10.5	2	.45							
Erysipelas	6	1.36	46	.12	.02	7.66	6	1.36							
Febricula	16	3.63	87	.23	.05	5.43	15	3.40	1	.22					
Febris continua simplex	67	15.20	257	.70	.15	3.83	63	14.29	1	.22	1	.22			2
Febris enterica	7	1.58	131	.35	.07	18.71	2	.45	3	.68			2	.45	
Febris intermittens	265	59.12	1,256	3.43	.77	4.73	250	56.72	13	2.94					2
Febris remittens	56	12.70	339	.92	.28	6.05	48	10.89	8	1.81					
Morbilli	4	.90	66	.18	.04	16.5	3	.68	1	.22					
Pertussis	2	.45	7	.01		3.5			2	.45					
Scarlatina	5	1.13	20	.05	.01	4	1	.22	4	.90					
Vaccina	19	4.31	102	.27	.06	5.36	17	3.85							2
Varioloides	1	.22	10	.02		10			1	.22					
Total	463	105.05	2,438	6.66	1.51	5.28	420	95.29	34	7.72	1	.22	2	.45	6
2.—Constitutional diseases.															
Adynamia	65	14.74	874	2.38	.54	13.44	36	8.16	23	5.21	2	.45			4
Anæmia	2	.45	10	.02		5	1	.22	1	.22					
Atrophia	1	.22	3			3			1	.22					
Carcinoma	2	.45	2			1			2	.45					
Diabetes	1	.22	6	.16	.03	6			1	.22					
Hydrops	5	1.13	49	.13	.02	9.8	5	1.13							
Lumbago	8	1.81	56	.15	.03	7	8	1.81							
Myalgia	7	1.58	38	.10	.02	5.42	7	1.58							
Podagra	9	2.04	60	.16	.03	6.66	8	1.81	1	.22					

TABLE III.—*Showing the number of cases, the invalided, and dead for each disease on each vessel on the North Atlantic station.*

Vessels or stations	Alarm.				Alliance.				Ajax.				Bache.				Blake.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES.																				
1.—*Zymotic diseases.*																				
Catarrhus epidemicus	1																			
Cynanche parotidea																				
Dengue																				
Diphtheria																				
Erysipelas																				
Febricula																				
Febris continua simplex					4															
Febris enterica																	1			
Febris intermittens	6	1			14				5				12							
Febris remittens									4				1							
Morbilli																				
Pertussis																				
Scarlatina																				
Vaccina																				
Varioloides																				
Total	7	1			18				9				13				1			
Ratio per M	1.58	.22			4.09				2.04				2.05				.22			
Number of sick-days	25				80				35				73				.35			
Average number sick daily	.06				.21				.09				.19				.09			
Average number sick daily per M	.01				.04				.02				.04				.02			
Average duration of treatment	3.57				4.44				3.88				5.61				.35			

TABLE II.—*Showing the number of cases, the discharged, the invalided, and the dead for each disease, &c.*—Continued.

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Continued.
									To hospital.		From service.				
	Number.	Per 1,000 of force.		Absolute.	Per 1,000 of force.		Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	
LOCAL DISEASES—Continued.															
3.—Diseases of the ear.															
Otalgia	2	.45	6	.01	.. ...	3	2	.45	.....	.....	.....	.....	.....	.....	.....
Otitis	14	3.17	82	.22	.04	5.85	12	2.72	1	.22	.....	.....	1	.22	.....
Otorrhœa	1	.22	12	.03	.....	12	1	.22	.....	.....	.....	.....	.....	.....	.....
Surditas	4	.90	35	.09	.02	8.75	1	.22	3	.68	.....	.....	.....	.....	.....
Total	21	4.76	135	.36	.08	6.42	16	3.63	4	.90	.....	.....	1	.22	.....
4.—Diseases of the teeth.															
Odontalgia	12	2.72	22	.05	.01	1.83	11	2.49	1	.22	.....	.....	.....	.....	.....
Parulis	1	.22	4	.01	.....	4	1	.22	.....	.....	.....	.....	.....	.....	.....
Total	13	2.95	26	.07	.01	2	12	2.72	1	.22	.....	.....	.....	.....	.....
5.—Diseases of the circulatory system.															
Aneurysma	1	.22	24	.06	.01	24	.....	.....	1	.22	.....	.....	.....	.....	.....
Angina pectoris	1	.22	3	.....	.....	3	1	.22	.....	.....	.....	.....	.....	.....	.....
Hypertropia cordis	1	.22	40	.10	.02	40	.....	.....	1	22	.....	.....	.....	.....	.....
Morbi valvularum cordis	6	1.36	145	.39	.05	24.16	1	.22	5	1.13	.....	.....	.....	.....	.....
Palpitatis	17	3.85	209	.57	.12	12.29	5	1.13	8	1.81	1	.22	.....	.....	3
Pericarditis	3	.68	28	.07	.01	9.33	1	.22	2	.45	.....	.....	.....	.....	.....
Syncope	2	.45	7	.01	.....	3.33	2	.45	.....	.....	.....	.....	.....	.....	.....
Varix	3	.68	9	.02	.....	3	2	.45	1	.22	.....	.....	.....	.....	.....
Total	34	7.71	465	1.27	.28	13.67	12	2.72	18	4.09	1	.22	.....	.....	3
6.—Diseases of the absorbent system.															
Adenitis	42	9.52	458	1.25	.28	10.90	32	7.26	10	2.26	.....	.....	.....	.....	.....

Average duration of treatment	3.60				8.16				4				6						
LOCAL DISEASES.																			
1.—*Diseases of the nervous system.*																			
Apoplexia					2			1	1			1							
Asthenia																			
Cephalalgia					3														
Dementia																			
Epilepsia					2				1	1									
Insolatio																			
Melancholia																			
Meningitis																1			
Monomania																			
Nausea marina																			
Neuralgia	3				1								1						
Nostalgia																			
Paralysis																			
Pleurodynia																			
Sciatica																			
Tetanus																			
Vertigo																			
Total	3				8			1	2	1		1	1				1		
Ratio per M	.68				1.81			.22	.45	.22		.22	.22				.22		
Number of sick-days	10				41				1				30				10		
Average number sick daily	.02				.11								.08				.02		
Average number sick daily per M					.02								.01						
Average duration of treatment	3.33				5.12				.5				.30				.10		
2.—*Diseases of the eye.*																			
Amaurosis																			
Conjunctivitis					5	1			1										
Hemeralopia																			
Hordeolum					1														
Iritis																			
Keratitis																			
Myopia					1	1													
Ophthalmia																			
Ophthalmia gonorrhœica	2	2																	
Pterygium																			
Retinitis																			
Sclerotitis																			

TABLE II.—*Showing the number of cases, the discharged, the invalided, and the dead for each disease, &c.*—Continued.

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Continued.
									To hospital.		From service.				
	Number.	Per 1,000 of force.		Absolute.	Per 1,000 of force.		Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	
LOCAL DISEASES—Continued.															
3.—Diseases of the ear.															
Otalgia	2	.45	6	.01	....	3	2	.45	.....	.....	.....	.....	.....	.....	.....
Otitis	14	3.17	82	.22	.04	5.85	12	2.72	1	.22	.....	.....	1	.22	.....
Otorrhœa	1	.22	12	.03	.....	12	1	.22	.....	.....	.....	.....	.....	.....	.....
Surditas	4	.90	35	.09	.02	8.75	1	.22	3	.68	.....	.....	.....	.....	.....
Total	21	4.76	135	.36	.08	6.42	16	3.63	4	.90	.....	.....	1	.22	.....
4.—Diseases of the teeth.															
Odontalgia	12	2.72	22	.05	.01	1.83	11	2.49	1	.22	.....	.....	.....	.....	.....
Parulis	1	.22	4	.01	.....	4	1	.22	.....	.....	.....	.....	.....	.....	.....
Total	13	2.95	26	.07	.01	2	12	2.72	1	.22	.....	.....	.....	.....	.....
5.—Diseases of the circulatory system.															
Aneurysma	1	.22	24	.06	.01	24	.....	.....	1	.22	.....	.....	.....	.....	.....
Angina pectoris	1	.22	3	....	.....	3	1	.22	.....	.....	.....	.....	.....	.....	.....
Hypertropia cordis	1	.22	40	.10	.02	40	.....	.....	1	22	.....	.....	.....	.....	.....
Morbi valvularum cordis	6	1.36	145	.39	.05	24.16	1	.22	5	1.13	.....	.....	.....	.....	.....
Palpitatis	17	3.85	209	.57	.12	12.29	5	1.13	8	1.81	1	.22	.....	.....	3
Pericardiitis	3	.68	28	.07	.01	9.33	1	.22	2	.45	.....	.....	.....	.....	.....
Syncope	2	.45	7	.01	.....	3.33	2	.45	.....	.....	.....	.....	.....	.....	.....
Varix	3	.68	9	.02	.....	3	2	.45	1	.22	.....	.....	.....	.....	.....
Total	34	7.71	465	1.27	.28	13.67	12	2.72	18	4.09	1	.22	.....	.....	3
6.—Diseases of the absorbent system.															
Adenitis	42	9.52	458	1.25	.28	10.90	32	7.26	10	2.26	.....	.....	.....	.....	.....

Lymphangitis	1	.22	9	.02	.....	9	1	.22	.....	.....	.....	.....	.....	.....	.....
Total	43	9.74	467	1.27	.28	10.86	33	7.48	10	2.26	.....	.....	.....	.....	.....
7.—Diseases of the respiratory system.															
Apnœa	1	.22	1	.....	.....	1	1	.22	.....	.....	.....	.....	.....	.....	.....
Asthma	6	1.36	39	.10	.02	6.5	3	.68	3	.68	.....	.....	.....	.....	.....
Bronchitis acuta	142	32.21	1,192	3.25	.73	8.39	119	27	14	3.17	1	.22	.....	.....	8
Bronchitis chronica	25	5.67	430	1.17	.26	17.2	11	2.49	13	2.95	1	.22	.....	.....	.....
Catarrhus	189	42.88	771	2.10	.47	4.07	172	39.02	1	.22	.....	.....	.....	.....	16
Catarrhus bronchialis	52	11.80	330	.90	.20	6.32	48	10.89	4	.90	.....	.....	.....	.....	.....
Congestio pulmonalis	1	.22	13	.03	.....	13	1	.22	.....	.....	.....	.....	.....	.....	.....
Hæmoptysis	12	2.72	86	.23	.05	7.16	4	.90	8	1.81	.....	.....	.....	.....	.....
Laryngitis	11	2.49	84	.22	.04	7.63	10	2.26	1	.22	.....	.....	.....	.....	.....
Phthisis pneumonica acuta	6	1.36	20	.05	.01	3.33	1	.22	5	1.13	.....	.....	.....	.....	.....
Phthisis pneumonica chronica	12	2.72	175	.47	.10	14.58	2	.45	10	2.26	.....	.....	.....	.....	.....
Pleuritis	21	4.76	199	.54	.12	9.47	11	2.49	9	2.04	.....	.....	.....	.....	1
Pneumonia	33	7.48	853	2.33	.52	25.84	21	4.76	7	1.58	2	.45	2	.45	1
Total	511	115.94	4,193	11.45	2.59	8.20	404	91.66	75	17.01	4	.90	2	.45	26
8.—Diseases of the digestive system.															
Cholera morbus	78	17.69	233	.63	.14	2.98	78	17.69	.....	.....	.....	.....	.....	.....	.....
Colica	55	12.47	184	.50	.11	3.34	54	12.25	1	.22	.....	.....	.....	.....	.....
Constipatio	40	9.07	101	.27	.06	2.52	39	8.84	1	.22	.....	.....	.....	.....	.....
Diarrhœa acuta	284	64.43	1,192	3.25	.73	4.19	277	62.85	2	.45	1	.22	.....	.....	4
Diarrhœa chronica	8	1.81	86	.23	.05	10.75	4	.90	3	.68	.....	.....	.....	.....	1
Dysenteria acuta	29	6.58	146	.39	.08	5.03	27	6.22	2	.45	.....	.....	.....	.....	.....
Dysenteria chronica	1	.22	8	.02	.....	8	1	.22	.....	.....	.....	.....	.....	.....	.....
Dyspepsia	25	5.67	156	.42	.09	6.24	22	4.99	3	.68	.....	.....	.....	.....	.....
Enteritis	2	.45	22	.05	.01	11	1	.22	1	.22	.....	.....	.....	.....	.....
Fauces ulcerosa	3	.68	22	.05	.01	7.33	2	.45	.....	.....	.....	.....	.....	.....	1
Fistula in ano	4	.90	25	.06	.01	6.25	1	.22	2	.45	1	.22	.....	.....	.....
Gastritis	5	1.13	28	.07	.01	5.6	5	1.13	.....	.....	.....	.....	.....	.....	.....
Gastrodynia	2	.45	11	.03	.....	5 5	2	.45	.....	.....	.....	.....	.....	.....	.....
Hæmorrhois	30	6.80	242	.66	.14	8.06	20	4.53	10	2.26	.....	.....	.....	.....	.....
Hepatitis acuta	1	.22	18	.04	.....	18	1	.22	.....	.....	.....	.....	.....	.....	.....
Hepatitis chronica	1	.22	6	.01	.....	6	.....	.....	1	.22	.....	.....	.....	.....	.....
Hernia	6	1.36	52	.14	.03	8.66	5	1.13	1	.22	.....	.....	.....	.....	.....
Icterus	12	2.72	87	.23	.05	7.25	11	2.49	1	.22	.....	.....	.....	.....	.....
Perityphlitis	1	.22	11	.03	.....	.11	.....	.....	.....	.....	1	.22	.....	.....	.....
Pharyngitis	166	37.66	899	2.45	.55	5.41	160	36.30	2	.45	.....	.....	.....	.....	4
Splenitis	2	.45	16	.04	.....	8	2	.45	.....	.....	.....	.....	.....	.....	.....
Stomatitis	4	.90	16	.04	.....	4	4	.90	.....	.....	.....	.....	.....	.....	.....
Tonsillitis	242	54.90	1,260	3.44	.78	5.20	222	50.37	7	1.58	.....	.....	.....	.....	13
Tænia	1	.22	3	.....	.....	3	1	.22	.....	.....	.....	.....	.....	.....	.....
Vermes	5	1.13	39	.10	.02	7.8	5	1.13	.....	.....	.....	.....	.....	.....	.....
Total	1,007	228.48	4,863	13.28	3.01	4.82	944	214.19	37	8.39	3	.68	.....	.....	23

TABLE II.—*Showing the number of cases, the discharged, the invalided, and the dead for each disease, &c.*—Continued.

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Continued.
									To hospital.		From service.				
	Number.	Per 1,000 of force.		Absolute.	Per 1,000 of force.		Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	
LOCAL DISEASES—Continued.															
9.—Diseases of the genito-urinary system.															
Albuminuria	2	.45	3	.....	.....	1.5	.....	.....	2	.45	.....	.....	.....	.....	.....
Balanitis	4	.90	25	.06	.01	6.25	4	.90	.....	.....	.....	.....	.....	.....	.....
Calculus	1	.22	22	.05	.01	22	1	.22	.....	.....	.....	.....	.....	.....	.....
Chancroides	22	4.99	375	1.02	.23	17.04	21	4.76	.....	.....	.....	.....	.....	.....	1
Cystitis	9	2.04	126	.34	.07	14	7	1.58	1	.22	.....	.....	.....	.....	1
Dysuria	1	.22	4	.01	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	1
Enuresis	16	3.63	60	.16	.03	3.75	4	.90	12	2.72	.....	.....	.....	.....	.....
Epididymitis	1	.22	19	.05	.01	19	.....	.....	1	.22	.....	.....	.....	.....	.....
Gonorrhœa	84	19.05	1,037	2.83	.64	12.34	62	14.06	19	4.31	.....	.....	.....	.....	3
Hæmaturia	3	.68	40	.10	.02	13.33	1	.22	2	.45	.....	.....	.....	.....	.....
Hydrocele	1	.22	5	.01	.....	5	1	.22	.....	.....	.....	.....	.....	.....	.....
Nephritis	2	.45	9	.02	.....	4.5	.....	.....	2	.45	.....	.....	.....	.....	.....
Orchitis	41	9.30	468	1.27	.28	11.41	37	8.38	2	.45	.....	.....	.....	.....	2
Paraphymosis	2	.45	12	.03	.....	6	1	.22	1	.22	.....	.....	.....	.....	.....
Phymosis	1	.22	5	.01	.....	5	.....	.....	.....	.....	1	.22	.....	.....	.....
Spermatorrhœa	1	.22	7	.01	.....	7	.....	.....	1	.22	.....	.....	.....	.....	.....
Urethræ strictura	16	3.63	123	.33	.07	7.68	9	2.04	5	1.13	2	.45	.....	.....	.....
Total	207	46.96	2,340	6.39	1.44	11.30	148	33.58	48	10.89	3	.68	.....	.....	8
10.—Diseases of the locomotive system.															
Arthritis	1	.22	4	.01	.....	4	1	.22	.....	.....	.....	.....	.....	.....	.....
Hydrops articulorum	1	.22	40	.10	.02	40	1	.22	.....	.....	.....	.....	.....	.....	.....
Necrosis	1	.22	71	.19	.04	71	.....	.....	1	.22	.....	.....	.....	.....	.....
Ostitis	1	.22	6	.01	.....	6	.....	.....	1	.22	.....	.....	.....	.....	.....
Periostitis	1	.22	2	.....	.....	2	1	.....	.....	.....	.....	.....	.....	.....	.....
Synovitis	4	.90	82	.22	.04	20.5	3	.....	1	.22	.....	.....	.....	.....	.....
Total	9	2.04	205	.56	.12	22.77	6	1.36	3	.68	.....	.....	.....	.....	.....

11.—*Diseases of the integumentary system.*															
Abscessus	101	22.91	946	2.58	.58	9.36	93	21.10	7	1.58	1	.22			
Acne	1	.22	4	.01		4	1	.22							
Anthrax	12	2.72	125	.34	.07	10.41	12	2.72							
Cellulitis	2	.45	9	.02		4.5	1	.22			1	.22			
Dermatitis	1	.22	2			2	1	.22							
Ecthyma	1	.22	11	.03		11	1	.22							
Eczema	18	4.09	237	.64	.14	13.16	14	3.17	4	.90					
Epithelioma	1	.22	11	.03		11					1	.22			
Erythema	7	1.58	17	.04		2.42	7	1.58							
Furunculus	182	41.56	1,098	3.00	68	6.03	178	40.65	1	.22					3
Herpes	2	.45	15	.04		7.5	2	.45							
Impetigo	3	.68	22	.05	.01	7.33	3	.68							
Lichen	1	.22	4	.01		4	1	.22							
Onychia	2	.45	14	.03		7	1	.22							1
Paronychia	31	7.02	296	.80	.18	9.54	31	7.02							
Purpura	1	.22	6	.01		6	1	.22							
Psoriasis	2	.45	25	.06	.01	12.5	2	.45							
Tinea	4	.90	32	.08	.01	8	3	.68							1
Unguis involutis	6	1.36	73	.19	.04	12.16	5	1.13	1	.22					
Ulcus	37	8.38	521	1.42	.32	14.08	31	7.02	2	.45					4
Urticaria	2	.45	5	.01		2.5	2	.45							
Total	417	94.61	3,473	9.48	2.15	8.32	390	88.49	15	3.39	3	.68			9
12.—*Non-malignant tumors and cysts.*															
Hæmatoma	1	.22	15	.04		15	1	.22							
Lipoma	1	.22	11	.03		11			1	.22					
Sarcoma	1	.22	18	.04		18			1	.22					
Total	3	.68	44	.12	.02	14.66	1	.22	2	.45					
13.—*Poisons.*															
Alcoholismus	50	11.34	151	.41	.09	3.02	48	10.89	2	.45					
Delirium tremens	3	.68	10	.02		3.33	2	.45	1	.22					
Ebriositas	27	6.22	60	.16	.03	2.22	27	6.22							
Vulnus venenatum	3	.68	12	.03		4	3	.68							
Venenatis	1	.23	9	.02		9	1	.22							
Total	84	19.05	242	.64	.14	2.88	81	18.37	3	.68					
14.—*Violent diseases and deaths.*															
Abrasio	58	13.16	485	1.32	.29	8.36	57	12.93	1	.22					
Ambustio	34	7.71	254	.69	.15	7.47	29	6.58	2	.45					3
Concussio cerebri	4	.90	33	.09	.02	8.25	1	.22	2	.45			1	.22	
Congelatio	9	2.04	34	.09	.02	3.77	1	.22							8
Contusio	203	46.06	1,502	4.10	.13	7.39	189	42.88	6	1.36	2	.45	1	.22	5
Fractura	34	7.71	486	1.32	.29	14.29	14	3.17	17	3.85			1	.22	2

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease on each vessel, &c.*—Continued.

Vessels or stations	Alarm.				Alliance.				Ajax.				Bache.				Blake.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES—Continued.																				
2.—Constitutional diseases.																				
Adynamia					5	1														
Anæmia																				
Atrophia																				
Carcinoma																				
Diabetes																				
Hydrops																				
Lumbago																				
Myalgia													1							
Podagra													2							
Rheumatismus acutus	3				1								2							
Rheumatismus chronicus					25	4			1	1										
Rheumatismus subacutus																				
Scrofula																				
Senectus					2	2														
Syphilis primitiva					8	2														
Syphilis consecutiva	2	1			1															
Torticollis																				
Tuberculosis																				
Total	5	1			42	9			1	1			5							
Ratio per M	1.13	.22			9.52	2.04			.22	.22			1.13							
Number of sick-days	18				343				4				30							
Average number sick daily	.04				.93				.01				.08							
Average number sick daily per M					.21								.01							

TABLE III.—*Showing the number of cases, the invalided, and dead for each disease on each vessel on the North Atlantic station.*

Vessels or stations	Alarm.				Alliance.				Ajax.				Bache.				Blake.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES.																				
1.—*Zymotic diseases.*																				
Catarrhus epidemicus	1																			
Cynanche parotidea																				
Dengula																				
Diphtheria																				
Erysipelas																				
Febricula																				
Febris continua simplex					4															
Febris enterica																	1			
Febris intermittens	6	1			14				5				12							
Febris remittens									4				1							
Morbilli																				
Pertussis																				
Scarlatina																				
Vaccina																				
Varioloides																				
Total	7	1			18				9				13				1			
Ratio per M	1.58	.22			4.09				2.04				2.95				.22			
Number of sick-days	25				80				35				73				.35			
Average number sick daily	.06				.21				.09				.19				.09			
Average number sick daily per M	.01				.04				.02				.04				.02			
Average duration of treatment	3.57				4.44				3.88				5.61				.35			

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease on each vessel, &c.*—Continued.

Vessels or stations	Alarm.				Alliance.				Ajax.				Bache.				Blake.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
GENERAL DISEASES—Continued.																				
2.—Constitutional diseases.																				
Adynamia					5	1														
Anæmia																				
Atrophia																				
Carcinoma																				
Diabetes																				
Hydrops																				
Lumbago																				
Myalgia													1							
Podagra													2							
Rheumatismus acutus	3				1								2							
Rheumatismus chronicus					25	4			1	1										
Rheumatismus subacutus																				
Scrofula																				
Senectus					2	2														
Syphilis primitiva					8	2														
Syphilis consecutiva	2	1			1															
Torticollis																				
Tuberculosis																				
Total	5	1			42	9			1	1			5							
Ratio per M	1.13	.22			9.52	2.04			.22	.22			1.13							
Number of sick-days	18				343				4				30							
Average number sick daily	.04				.93				.01				.08							
Average number sick daily per M					.21								.01							

Average duration of treatment	3.60				8.16				4				6						
LOCAL DISEASES.																			
1.—*Diseases of the nervous system.*																			
Apoplexia					2			1	1			1							
Asthenia																			
Cephalalgia					3														
Dementia																			
Epilepsia					2				1	1									
Insolatio																			
Melancholia																			
Meningitis																1			
Monomania																			
Nausea marina																			
Neuralgia	3				1								1						
Nostalgia																			
Paralysis																			
Pleurodynia																			
Sciatica																			
Tetanus																			
Vertigo																			
Total	3				8			1	2	1		1	1			1			
Ratio per M	.68				1.81			.22	.45	.22		.22	.22			.22			
Number of sick-days	10				41				1				30			10			
Average number sick daily	.02				.11								.08			.02			
Average number sick daily per M					.02								.01						
Average duration of treatment	3.33				5.12				.5				.30			.10			
2.—*Diseases of the eye.*																			
Amaurosis																			
Conjunctivitis					5	1			1										
Hemeralopia																			
Hordeolum					1														
Iritis																			
Keratitis																			
Myopia					1	1													
Ophthalmia																			
Ophthalmia gonorrhœica	2	2																	
Pterygium																			
Retinitis																			
Sclerotitis																			

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease on each vessel, &c.*—Continued.

Vessels or stations	Alarm.				Alliance.				Ajax.				Bache.				Blake.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. Form service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																				
2.—*Diseases of the eye*—Continued.																				
Irido																				
Total	2	2			7	2			1											
Ratio per M	.45	.45			1.58	.45			.22											
Number of sick-days	4				62				17											
Average number sick daily	.01				.16				.04											
Average number sick daily per M					.03															
Average duration of treatment	2				8.85				17											
3.—*Diseases of the ear.*																				
Otalgia																				
Otitis					2															
Otorrhœa																				
Surditas																				
Total					2															
Ratio per M					.45															
Number of sick-days					9															

Average number sick daily					.02														
Average number sick daily per M																			
Average duration of treatment					4.5														
4.—*Diseases of the teeth.*																			
Odontalgia	2				2														
Parulis																			
Total	2				2														
Ratio per M	.45				.45														
Number of sick days	2				5														
Average number sick daily					.01														
Average number sick daily per M																			
Average duration of treatment	1				2.5														
5.—*Diseases of the circulatory system.*																			
Aneurysma					1	1													
Angina pectoris																			
Hypertrophia cordis																			
Morbi valvularum cordis									1	1									
Palpitatio					4	2													
Pericarditis																			
Syncope																			
Varix																			
Total					5	3			1	1									
Ratio per M					1.13	.68			.22	.22									
Number of sick-days					109				1										
Average number sick daily					29														
Average number sick daily per M					.06														
Average duration of treatment					21.8				1										
6.—*Diseases of the absorbent system.*																			
[illegible]itis					4	2													
[illegible]ngitis																			
					4	2													

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease on each vessel, &c.*—Continued.

Vessels or stations	Alarm.				Alliance.				Ajax.				Bache.				Blake.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
6.—*Diseases of the absorbent system*—Cont'd.																				
Ratio per M					.90	.45														
Number of sick-days					75															
Average number sick daily					.20															
Average number sick daily per M					.04															
Average duration of treatment					18.75															
7.—*Diseases of the respiratory system.*																				
Apnœa																				
Asthma					1	1														
Bronchitis acuta	2												3							
Bronchitis chronica					1				1	1										
Catarrhus	4				14															
Catarrhus bronchialis													3							
Congestio pulmonalis													1							
Hæmoptysis																				
Laryngitis					1				1											
Phthisis pneumonica acuta																				
Phthisis pneumonica chronica	1	1																		
Pleuritis	4	1																		
Pneumonia																				
Total	11	2			17	1			2	1			7							

Ratio per M	2.49	.45			3.85	22			.45	22			1.58							
Number of sick-days	38				87				9				39							
Average number sick daily	.10				.23				.02				.10							
Average number sick daily per M	.02				.05								.02							
Average duration of treatment	3.45				5.11				5.10				5.57							
8.—Diseases of the digestive system.																				
Cholera morbus	1				4				1											
Colica	6	1			5															
Constipatio	6				2															
Diarrhœa acuta	9				9				1				4							
Diarrhœa chronica																				
Dysenteria acuta																				
Dysenteria chronica																				
Dyspepsia	1																			
Enteritis																				
Fauces ulcerosa																				
Fistula in ano																				
Gastritis	1																			
Gastrodynia																				
Hæmorrhois					6	3														
Hepatitis acuta																				
Hepatitis chronica																				
Hernia																				
Icterus																				
Perityphelitis																				
Pharyngitis	2												1							
Splenitis																				
Stomatitis																				
Tonsillitis					10	1							3							
Taenia																				
Vermes					2															
Total	26	1			38	4			2				8							
Ratio per M	5.89	.22			8.62	.90			.45				1.81							
Number of sick-days	62				114				7				65							
Average number sick daily	.16				.31				.01				.17							
Average number sick daily per M	.03				.07								.03							
Average duration of treatment	2.38				3.0				3.5				8.12							

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease on each vessel, &c.*—Continued.

Vessels or stations	Alarm.				Alliance.				Ajax.				Bache.				Blake.			
Diseases and injuries.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.
		To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.	
LOCAL DISEASES—Continued.																				
9.—*Diseases of the genito-urinary system.*																				
Albuminuria																				
Balanitis																				
Calculus																				
Chancroides					6								1							
Cystitis	1	1			3															
Dysuria																				
Enuresis					1															
Epididymitis																				
Gonorrhœa					5															
Hæmaturia																				
Hydrocele																				
Nephritis																				
Orchitis					2															
Paraphymosis	1	1																		
Phymosis																				
Spermatorrhœa																				
Urethræ strictura					2	1														
Total	2	2			19	1							1							
Ratio per M	.45	.45			4.31	0.22							.22							
Number of sick-days	2				198								27							
Average number sick daily					.54								.07							
Average number sick daily per M					.12								.01							
Average duration of treatment	1				10.42								.27							
10.—*Diseases of the locomotive system.*																				
Arthritis																				

Hydrops articulorum																			
Necrosis																			
Ostitis																			
Periostitis																			
Synovitis																			
Total																			
Ratio per M																			
Number of sick-days																			
Average number sick daily																			
Average number sick daily per M																			
Average duration of treatment																			
11.—*Diseases of the integumentary system.*																			
Abscessus					10				1										
Acne																			
Anthrax					1														
Cellulitis																			
Dermatitis																			
Ecthyma																			
Eczema					4								1						
Epithelioma																			
Erythema	1																		
Furunculus					15				1										
Herpes					1														
Impetigo					1														
Lichen																			
Onychia																			
Paronychia																			
Pupura																			
Psoriasis																			
Tinea																			
Unguis involutis																			
Ulcus					1								3						
Urticaria																			
Total	1				33				2				4						
Ratio per M	.22				7.48				.45				.90						
Number of sick-days	4				261				3				49						
Average number sick daily	.01				.71								.13						
Average number sick daily per M					.16								.02						

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease on each vessel, &c.—Continued.*

Vessels or stations	Alarm.				Alliance.				Ajax.				Bache.				Blake.			
Diseases and injuries.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.
		To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.	
LOCAL DISEASES—Continued.																				
11.—*Diseases of the integumentary system.*																				
Average duration of treatment	.4				7.90				1.5				12.25							
Non-malignant tumors and cysts.																				
Hæmatoma																				
Lipoma																				
Sarcoma																				
Total																				
Ratio per M																				
Number of sick-days																				
Average number sick daily																				
Average number sick daily per M																				
Average duration of treatment																				
Poisons.																				
Alcoholismus					13															
Delirium tremens																				
Ebriositas																				
Venenatio																				
Vulnus venenatum																				
Total					13															
Ratio per M					2.95															

Number of sick-days					49														
Average number sick daily					.13														
Average number sick daily per M					.02														
Average duration of treatment					3.76														
Violent diseases and deaths.																			
Abrasio					3				1				2						
Ambustio					3	1													
Concussio cerebri					1			1											
Congelatio																			
Contusio	3				13	1													
Fractura													1	1			1		
Fractura cranii et compressio cerebri																			
Luxatio	1				1	1													
Stremma					8				1	1			1						
Submersio																			
Vulnus contusum					15														
Vulnus incisum					6														
Vulnus laceratum																			
Vulnus punctum					3														
Vulnus sclopetarium					1														
Foreign body in pharynx																			
Total	4				54	3		1	2	1			4	1			1		
Ratio per M	.90				11.57	.68		.22	.45	.22			90	.22			.22		
Number of sick-days	8				334				7				311				32		
Average number sick daily	.02				.91				.01				.84				.08		
Average number sick daily per M					.20								.19				.01		
Average duration of treatment	2				6.18				3.5				77.75				32		
Grand aggregate	63	9			262	25		2	22	5		1	743	1			3		
Ratio per M	14.29	2.04			59.45	5.67		.45	4.99	1.13		.22	9.75	.22			.68		
Number sick-days	173				1767				84				624				77		
Average number sick daily	.47				4.82				.22				1.70				.21		
Average number sick daily per M	.10				1.09				.04				.40				.04		
Average duration of treatment	2.74				6.74				3.81				14.57				25.66		

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease on each vessel, &c.*—Continued.

Vessels or stations	Catskill.				Colorado.				Constitution.				Constellation.				Dale.			
Diseases and injuries.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.
		To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.	
GENERAL DISEASES.																				
1.—*Zymotic diseases.*																				
Catarrhus epidemicus									4				2							
Cynanche parotidea																				
Dengnis																				
Diphtheria																				
Erysipelas																				
Febricula													1				2			
Febris continua simplex					1								13							
Febris enterica																				
Febris intermittens	6				8	1			22	1										
Febris remittens					3	1			6	1			7	1						
Morbilli																				
Pertussis													2	2						
Scarlatina									4	4										
Vaccina					4				2				1							
Varioloides																				
Total	6				16	2			38	6			26	3			2			
Ratio per M	1.36				3.63	.45			8.61	1.36			5.89	.68			.45			
Number of sick-days	23				46				254				95				7			
Average number sick daily	.06				.12				.68				.49				.11			
Average number sick daily per M	.01				.02				.15				.11				.02			
Average duration of treatment	3.83				2.87				6.68				3.65				3.50			

2.—*Constitutional diseases.*																				
Adynamia					1				12	4			3	3						
Anæmia																				
Atrophia									1	1										
Carcinoma					1	1														
Diabetes																				
Hydrops					1								1							
Lumbago																				
Myalgia																				
Podagra																				
Rheumatismus acutus	1				4	3			4	1			2							
Rheumatismus chronicus	2	1			11	3			10	4			6	2						
Rheumatismus subacutus																				
Scrofula																				
Senectus																				
Syphilis primitiva					3	1			4	1			7	3						
Syphilis consecutiva					4	3			6	5										
Torticollis																				
Tuberculosis																				
Total	3	1			25	11			37	16			19	8						
Ratio per M	.68	.22			5.67	2.49			8.38	3.63			4.31	1.81						
Number of sick-days	11				117				746				186							
Average number sick daily	.03				.31				2.03				.96							
Average number sick daily per M					.07				.46				.21							
Average duration of treatment	3.66				4.68				20.16				9.78							
LOCAL DISEASES.																				
1.—*Diseases of the nervous system.*																				
Apoplexia																				
Asthenia													1							
Cephalalgia					1				10								4			
Dementia					1	1			2	2										
Epilepsia					2	1			1	1										
Insolatio													2							
Melancholia																				
Meningitis																				
Monomania																				
Nausea marina													2							
[illegible]					4	3			6	1			3							
					1															

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease on each vessel, &c.*—Continued.

Vessels or stations	Catskill.				Colorado.				Constitution.				Constellation.				Dale.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																				
1.—*Diseases of the nervous system*—Cont'd.																				
Tetanus									1	1										
Vertigo									4											
Total					9	5			24	5			8				4			
Ratio per M					2.04	43			5.44	1.13			1.81				.90			
Number of sick-days					38				255				18				4			
Average number sick daily					.10				.69				.09				.06			
Average number sick daily per M					.02				.15				.02				.01			
Average duration of treatment					4.22				10.62				2.25				1			
2.—*Diseases of the eye.*																				
Amaurosis					1	1														
Conjunctivitis					3	1			9	4										
Hemeralopia																				
Hordeolum																				
Iritis																				
Keratitis																				
Myopia																				
Ophthalmia					1	1														
Ophthalmia gonorrhœica																				
Pterygium					1	1														
Retinitis																				
Sclerotitis																				

Iridо																			
Total					6	4			9	4									
Ratio per M					1.36	.90			2.04	.90									
Number of sick-days					8				190										
Average number sick daily					.02				.51										
Average number sick daily per M									.11										
Average duration of treatment					1.33				21.11										
3.—Diseases of the ear.																			
Otalgia					1	1													
Otitis									1				1	2					
Otorrhœa					1														
Surditas									1	1									
Total					2	1			2	1			1	2					
Ratio per M					.45	.22			.45	.22			.22	.45					
Number of sick-days					14				23					10					
Average number sick daily					.03				.06					.05					
Average number sick daily per M									.01										
Average duration of treatment					7				11.5					5					
4.—Diseases of the teeth.																			
Odontalgia					1	1													
Parulis																			
Total					1	1													
Ratio per M					.22	.22													
Number of sick-days					1														
Average number sick daily																			
Average number sick daily per M																			
Average duration of treatment					1														

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease on each vessel, &c.*—Continued.

Vessels or stations	Catskill.				Colorado.				Constitution.				Constellation.				Dale.			
Diseases and injuries.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.
		To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.	
LOCAL DISEASES—Continued.																				
5.—*Diseases of the circulatory system.*																				
Aneurysma																				
Angina pectoris																				
Hypertrophia cordis									1	1										
Morbi valvularum cordis									1	1										
Palpitatio									3	3			1	1						
Pericarditis																				
Syncope																				
Varix													1							
Total									5	5			2	1						
Ratio per M									1.13	1.13			.45	.22						
Number of sick-days									180				7							
Average number sick daily									.49				.03							
Average number sick daily per M									.11											
Average duration of treatment									36				3.5							
6.—*Diseases of the absorbent system.*																				
Adenitis					2	2			3				2							
Lymphangitis																				
Total					2	2			3				2							
Ratio per M					.45	.45			.68				.45							

Number of sick-days				6				.35				42							
Average number sick daily				.01				.09				.21							
Average number sick daily per M								.02				.04							
Average duration of treatment				3				11.66				.21							
7.—Diseases of the respiratory system.																			
Apnœa																			
Asthma																			
Bronchitis acuta				11	1			15	5										
Bronchitis chronica	2	1		1				8	4										
Catarrhus	1			5				17	1			3				2			
Catarrhus bronchialis																			
Congestio pulmonalis																			
Hæmoptysis				1	1														
Laryngitis																			
Phthisis pneumonica acuta				1	1			1	1										
Phthisis pneumonica chronica								3	3										
Pleuritis				4	3			2	1										
Pneumonia	1		1	1								3		2					
Total	4		1	24	6			46	15			6		2		2			
Ratio per M	.90		.22	5.44	1.36			10.43	3.40			1.36		.45		.45			
Number of sick-days	16			162				615				80				3			
Average number sick daily	.04			.44				1.68				.41				.04			
Average number sick daily per M				.09				.38				.09							
Average duration of treatment	4			6.75				13.36				13.33				1.5			
8.—Diseases of the digestive system.																			
Cholera morbus				2				5				2				1			
Colica												4				1			
Constipatio				4								3				1			
Diarrhœa acuta				3				16	2			28				7			
Diarrhœa chronica				1															
Dysenteria acuta																			
Dysenteria chronica																			
Dyspepsia				1				9	1			1	1			1			
Enteritis								1											
Fauces ulcerosa																			
Fistula in ano																			
Gastritis																			
Gastrodynia																			
Hæmorrhois				3	1														

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease on each vessel, &c.*—Continued.

Vessels or stations	Catskill.				Colorado.				Constitution.				Constellation.				Dale.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																				
8.—*Diseases of the digestive system*—Continued.																				
Hepatitis acuta																				
Hepatitis chronica																				
Hernia					1															
Icterus					1															
Perityphlitis													1		1					
Pharyngitis									1				1							
Splenitis									1											
Stomatitis									1											
Tonsillitis					7				50				6	1						
Taenia																				
Vermes									2											
Total					23	1			86	3			146	2	1		11			
Ratio per M					5.21	.22			19.51	.68			10.43	.45	.22		2.49			
Number of sick-days					58				596				142				25			
Average number sick daily					.15				1.62				.73				.40			
Average number sick daily per M					.03				.36				.16				.09			
Average duration of treatment					2.52				6.93				3.08				2.27			
9.—*Diseases of the genito-urinary system.*																				
Albuminuria					1	1														
Balanitis																				
Calculus													1							
Chancroides									4											
Cystitis					1				1											
Dysuria																				

Enuresis									8	8			1							
Epididymitus																				
Gonorrhœa					1				3				5	1			1			
Hæmaturia																				
Hydrocele																				
Nephritis					1	1			1	1										
Orchitis					1				1				2							
Paraphymosis																				
Phymosis																	1		1	
Spermatorrhœa																				
Urethræ strictura					1	1							1							
Total					6	3			18	9			10	1			2		1	
Ratio per M					1.36	.68			4.09		2.04		2.26	.22			.45		.22	
Number of sick-days					28				205				127				15			
Average number of sick daily					.07				.56				.65				.24			
Average number of sick daily per M					.01				.12				.14							
Average duration of treatment					4.66				11.38				12.7				7.5			
10.—*Diseases of the locomotive system.*																				
Arthritis																				
Hydrops articulorum																				
Necrosis																				
Ostitis																				
Periostitis									1											
Synovitis									1											
Total									2											
Ratio per M									.45											
Number of sick-days									56											
Average number of sick daily									.15											
Average number sick daily per M									.03											
Average duration of treatment									28											
11.—*Diseases of the integumentary system.*																				
Abscessus					6	2			17	3	1		3							
Acne																				
Anthrax																				
Cellulitis													2		1					
Dermatitis																	1			
Ecthyma																				

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease on each vessel, &c.*—Continued.

Vessels or stations	Catskill.				Colorado.				Constitution.				Constellation.				Dale.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
11.—*Diseases of integumentary system*—Cont'd.																				
Eczema					2	1			1	1			1							
Epithelioma																				
Erythema																				
Furunculus					5				24				3				4			
Herpes																	1			
Impetigo									1											
Lichen																				
Onychia									1											
Paronychia									4				2				1			
Purpura									1											
Psoriasis																				
Tinea																				
Unguis involutis									1											
Ulcus					1				3	1			3							
Urticaria																	1			
Total					14	3			53	5	1		14		1		8			
Ratio per M					3.17				12.03	1.13	.22		3.17		.22		1.81			
Number of sick-days					116				570				151				20			
Average number sick daily					.31				1.55				.78				.47			
Average number sick daily per M					.07				.35				.17				.16			
Average duration of treatment					8.28				10.75				10.78				3.62			
12.—*Non-malignaat tumors and cysts.*																				
Hæmatoma													1							
Lipoma																				

Sarcoma													1	1								
Total													2	1								
Ratio per M													.45	.22								
Number of sick-days													33									
Average number sick daily													.17									
Average number sick daily per M													.03									
Average duration of treatment													16.5									
Poisons.																						
Alcoholismus																						
Delirium tremens					3	1																
Ebriositas																						
Venenatio																						
Vulnus venenatum																						
Total					3	1																
Ratio per M					.68	.22																
Number of sick-days					5																	
Average number sick daily					.01																	
Average number sick daily per M																						
Average duration of treatment					1.66																	
Violent diseases and deaths.																						
Abrasio					1				11				6				4					
Ambustio					1	1			2				1				1					
Concussio cerebri													1									
Congelatio					7				1													
Contusio	1				4				32	3			1				2					
Fractura					1				4	2												
Fractura cranii et compressio cerebri					1			1														
Luxatio									2	2			1	1								
Stremma					10	2			12				6				4					
Submersio																						
Vulnus contusum					4	1			12				7									
Vulnus incisum					5				7				1									
Vulnus laceratum									3	1			2				1					
Vulnus punctum					1				5				2				2					
Vulnus sclopetarium																						

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease an each vessel, &c.*—Continued.

Vessels or stations	Catskill.				Colorado.				Constitution.				Constellation.				Dale.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																				
Violent diseases and deaths—Continued.																				
Foreign body in pharynx	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Total	1	.....	.....	.....	35	4	.....	1	91	8	.....	.....	29	1	.....	.....	14	.....	.....	.....
Ratio per M	.22	.....	.....	.....	7.93	.90	.....	.22	20.64	1.81	.....	.....	6.68	.22	.....	.....	3.17	.....	.....	.....
Number of sick-days	2	.....	.....	.....	189	.....	.....	.....	919	.....	.....	.....	152	.....	.....	.....	40	.....	.....	.....
Average number sick daily	.....	.....	.....	.....	.51	.....	.....	.....	2.51	.....	.....	.....	7.87	.....	.....	.....	.65	.....	.....	.....
Average number sick daily per M	.....	.....	.....	.....	11	.....	.....	.....	.56	.....	.....	.....	1.78	.....	.....	.....	.14	.....	.....	.....
Average duration of treatment	2	.....	.....	.....	5.40	.....	.....	.....	10.09	.....	.....	.....	5.24	.....	.....	.....	2.57	.....	.....	.....
Grand aggregate	14	2	.....	1	166	44	.....	1	414	77.	1	1	166	17	4	.....	43	.....	1	.....
Ratio per M	3.17	.45	.....	.22	37.66	9.98	.....	.22	93.93	17.47	.22	.22	37.66	3.84	.90	.....	9.75	.....	.22	.....
Number of sick-days	52	.....	.....	.....	788	.....	.....	.....	4,644	.....	.....	.....	1,043	.....	.....	.....	123	.....	.....	.....
Average number sick daily	.14	.....	.....	.....	2.15	.....	.....	.....	17.68	.....	.....	.....	2.84	.....	.....	.....	.33	.....	.....	.....
Average number sick daily per M	.03	.....	.....	.....	.49	.....	.....	.....	2.87	.....	.....	.....	.64	.....	.....	.....	.07	.....	.....	.....
Average duration of treatment	3.71	.....	.....	.....	4.74	.....	.....	.....	11.21	.....	.....	.....	6.22	.....	.....	.....	7.86	.....	.....	.....

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease on each vessel, &c.*—Continued.

Vessels or stations	Despatch.				Franklin.				Galena.				Gedney.				Kearsarge.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES.																				
1.—*Zymotic diseases.*																				
Catarrhus epidemicus																				
Cynanche parotidea																				
Dengula																				
Diphtheria																				
Erysipelas																				
Febricula	3																3			
Febris continua simplex									2				3				1			
Febris enterica	1	1																		
Febris intermittens	8	3			6	1			27				4				11			
Febris remittens	1				6	2			1								2			
Morbilli																				
Pertussis																				
Scarlatina																				
Vaccina																				
Varioloides																				
Total	13	4			12	3			30				7				17			
Ratio per M	2.05	.90			2.72	.68			6.80				1.58				3.85			
Number of sick-days	42				39				98				26				85			
Average number sick daily	.27				.10				.76				.07				.23			
Average number sick daily per M	.06				.02				.17				.01				.05			
Average duration of treatment	3.23				3.25				3.26				3.71				5			

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease on each vessel, &c.*—Continued.

Vessels or stations	Despatch.				Franklin.				Galena.				Gedney.				Kearsarge.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
GENERAL DISEASES—Continued.																				
2.—*Constitutional diseases.*																				
Adynamia					2	1											2	1		
Anæmia					2	1														
Atrophia																				
Carcinoma																				
Diabetes																				
Hydrops																				
Lumbago																	2			
Myalgia																	6			
Podagra																				
Rheumatismus acutus									3											
Rheumatismus chronicus					3				1								10			
Rheumatismus subacutus																				
Scrofula																				
Senectus																				
Syphilis primitiva	1				3				3								1			
Syphilis consecutiva					3	1											1			
Torticollis																				
Tuberculosis					2	2														
Total	1				15	5			7								22	1		
Ratio per M	.22				3.40	1.13			1.58								4.99	.22		
Number of sick-days	6				94				38								1.37			
Average number sick daily	.03				.25				29								37			
Average number sick daily per M					.05				.06								.08			
Average duration of treatment	6				6.26				5.42								5.22			

LOCAL DISEASES.

1.—*Diseases of the nervous system.*

Apoplexia																		
Asthenia																		
Cephalalgia	1														28			
Dementia																		
Epilepsia	2	1																
Insolatio																		
Melancholia																		
Meningitis																		
Monomania																		
Nausea marina								1							3			
Neuralgia					1		1					1			2			
Nostalgia																		
Paralysis															1	1		
Pleurodynia																		
Sciatica																		
Tetanus																		
Vertigo															1			
Total	3	1			1		1	1				1			32	1		
Ratio per M	.68	.22			.22		.22	.22				.22			7.26	.22		
Number of sick-days	4				26			2				1			1.27			
Average number sick daily	.02				.07			.01							.34			
Average number sick daily per M					.01										.07			
Average duration of treatment	1.33				26			2				1			3.96			

2.—*Diseases of the eye.*

Amaurosis					2													
Conjunctivitis															3			
Hemeralopia																		
Hordeolum																		
Iritis																		
Keratitis																		
Myopia																		
Ophthalmia																		
Ophthalmia gonorrhœica																		
Pterygium																		
Retinitis																		
Scleroticitis																		
Total					2										3			

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease on each vessel, &c.*—Continued.

Vessels or stations	Despatch.				Franklin.				Galena.				Gedney.				Kearsarge			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
2.—*Diseases of the eye*—Continued.																				
Ratio per M					.45												.68			
Number of sick days					37												9			
Average number sick daily					.10												.02			
Average number sick daily per M					.02															
Average duration of treatment					18.5												3			
3.—*Diseases of the ear.*																				
Otalgia	1																			
Otitis																	1			
Otorrhœa																				
Surditas																	1	1		
Total	1																2	1		
Ratio per M	.22																.45	.22		
Number of sick-days	1																19			
Average number sick daily																	.05			
Average number sick daily per M																				
Average duration of treatment	1																9.5			

4.—*Diseases of the teeth.*																				
Odontalgia																				
Parulis					1												1			
Total					1												1			
Ratio per M					.22												.22			
Number of sick-days					2												3			
Average number sick daily																				
Average number sick daily per M																				
Average duration of treatment					2												3			
5.—*Diseases of the circulatory system.*																				
Aneurysma																				
Angina pectoris																				
Hypertrophia cordis																				
Morbi valvularum cordis																				
Palpitatio					1	1											1			
Pericarditis																				
Syncope																	1			
Varix																				
Total					1	1											2			
Ratio per M					.22	.22											.45			
Number of sick-days					2												9			
Average number sick daily																	.02			
Average number sick daily per M																				
Average duration of treatment					2												4.5			
6.—*Diseases of the absorbent system.*																				
Adenitis	2	1			3				4	1							1			
Lymphangitis																				
Total	2	1			3				4	1							1			
Ratio per M	.45	.22			.68				.90	.22							.22			
Number of sick-days	17				48				15								15			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Despatch.				Franklin.				Galena.				Gedney.				Kearsarge.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead
LOCAL DISEASES—Continued.																				
9.—*Diseases of genito-urinary system*—Cont'd.																				
Enuresis																	1	1		
Epididymitis					1												6			
Gonorrhœa					1	1														
Hæmaturia																				
Hydrocele									1				1				5			
Nephritis																				
Orchitis																				
Paraphymosis																				
Phymosis																	2	1		
Spermatorrhœa																				
Urethræ strictura																				
Total					2	1			1				1				18	2		
Ratio per M					.45	.22			.22				.22				4.09	.45		
Number of sick-days					14				13				9				2.71			
Average number sick daily					.03				.10				.02				.74			
Average number sick daily per M									.02								.16			
Average duration of treatment					7				13				9				15.05			
10.—*Diseases of the locomotive system.*																				
Arthritis	1																			
Hydrops articulorum																				
Necrosis																				

Otitis					1	1														
Periostitis																				
Synovitis					2	1											1			
Total	1				3	2											1			
Ratio per M	.22				.68	.45											.22			
Number of sick-days	4				21												13			
Average number sick daily	.02				.05												.03			
Average number sick daily per M					.01															
Average duration of treatment	4				7												13			
11.—*Diseases of the integumentary system.*																				
Abscessus									1								6			
Acne																	1			
Anthrax																				
Cellulitis																				
Dermatitis																				
Ecthyma																				
Eczema	1	1			1	1											2			
Epithelioma																				
Erythema																	3			
Furunculus					2				3				1				22			
Herpes																				
Impetigo																				
Lichen																				
Onychia																				
Paronychia																	1			
Purpura																				
Psoriasis																				
Tinea																	1			
Ungnis involutis																	3			
Ulcus	1																4			
Urticaria																				
Total	2	1			3	1			4				1				43			
Ratio per M	.45	.22			.68	.22			.90				.22				9.74			
Number of sick-days	13				10				15				1				3.14			
Average number sick daily	.08				.02				.11								.85			
Average number sick daily per M	.01								.02								.19			
Average duration of treatment	6.05				3.33				3.75				1				7.30			

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease on each vessel, &c.*—Continued.

Vessels or stations	Despatch.				Franklin.				Galena.				Gedney.				Kearsarge.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
2.—*Diseases of the eye*—Continued.																				
Ratio per M					.45												.68			
Number of sick days					37												9			
Average number sick daily					.10												.02			
Average number sick daily per M					.02															
Average duration of treatment					18.5												3			
3.—*Diseases of the ear.*																				
Otalgia	1																			
Otitis																	1			
Otorrhœa																				
Surditas																	1	1		
Total	1																2	1		
Ratio per M	.22																.45	.22		
Number of sick-days	1																19			
Average number sick daily																	.05			
Average number sick daily per M																				
Average duration of treatment	1																9.5			

4.—*Diseases of the teeth.*																			
Odontalgia																			
Parulis				1												1			
Total				1												1			
Ratio per M				.22												.22			
Number of sick-days				2												3			
Average number sick daily																			
Average number sick daily per M																			
Average duration of treatment				2												3			
5.—*Diseases of the circulatory system.*																			
Aneurysma																			
Angina pectoris																			
Hypertrophia cordis																			
Morbi valvularum cordis																			
Palpitatio				1	1											1			
Pericarditis																			
Syncope																1			
Varix																			
Total				1	1											2			
Ratio per M				.22	.22											.45			
Number of sick-days				2												9			
Average number sick daily																.02			
Average number sick daily per M																			
Average duration of treatment				2												4.5			
6.—*Diseases of the absorbent system.*																			
Adenitis	2	1		3				4	1							1			
Lymphangitis																			
Total	2	1		3				4	1							1			
Ratio per M	.45	.22		.68				.90	.22							.22			
Number of sick-days	17			48				15								15			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Despatch.				Franklin.				Galena.				Gedney.				Kearsarge.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
6—*Diseases of the absorbent system*—Cont'd.																				
Average number sick daily	.11				.13				.11								.04			
Average number sick daily per M	.02				.02				.02											
Average duration of treatment	8.5				16				3.75								15			
7.—*Diseases of the respiratory system.*																				
Apnœa																				
Asthma					1															
Bronchitis acuta					4				11	4			1				5			
Bronchitis chronica																	2	1		
Catarrhus	1				1								1				5			
Catarrhus bronchialis																	2			
Congestio pulmonalis																				
Hæmoptysis					1												1			
Laryngitis																				
Phthisis pneumonica acuta																	2	1		
Phthisis pneumonica chronica					2	2							2							
Pleuritis																				
Pneumonia																				
Total	1				9	2			11	4			4				17	2		
Ratio per M	.22				2.04	.45			2.49	.90			.90				3.85	.45		
Number of sick-days	4				82				68				7				153			
Average number sick daily	.02				.22				.53				.01				.41			

| | | |

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Despatch.				Franklin.				Galena.				Gedney.				Kearsarge.			
Diseases and injuries.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead
		To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.	
LOCAL DISEASES—Continued.																				
9.—*Diseases of genito-urinary system*—Cont'd.																				
Enuresis																	1	1		
Epididymitis					1												6			
Gonorrhœa					1	1														
Hæmaturia																				
Hydrocele									1				1				5			
Nephritis																				
Orchitis																				
Paraphymosis																				
Phymosis																	2	1		
Spermatorrhœa																				
Urethræ strictura																				
Total					2	1			1				1				18	2		
Ratio per M					.45	.22			.22				.22				4.09	.45		
Number of sick-days					14				13				9				2.71			
Average number sick daily					.03				.10				.02				.74			
Average number sick daily per M									.02								.16			
Average duration of treatment					7				13				9				15.05			
10.—*Diseases of the locomotive system.*																				
Arthritis	1																			
Hydrops articulorum																				
Necrosis																				

Otitis					1	1														
Periostitis																				
Synovitis					2	1											1			
Total	1				3	2											1			
Ratio per M	.22				.68	.45											.22			
Number of sick-days	4				21												13			
Average number sick daily	.02				.05												.03			
Average number sick daily per M					.01															
Average duration of treatment	4				7												13			
11.—*Diseases of the integumentary system.*																				
Abscessus									1								6			
Acne																	1			
Anthrax																				
Cellulitis																				
Dermatitis																				
Ecthyma																				
Eczema	1	1			1	1											2			
Epithelioma																				
Erythema																	3			
Furunculus					2				3				1				22			
Herpes																				
Impetigo																				
Lichen																				
Onychia																				
Paronychia																	1			
Purpura																				
Psoriasis																				
Tinea																	1			
Unguis involutis																	3			
Ulcus	1																4			
Urticaria																				
Total	2	1			3	1			4				1				43			
Ratio per M	.45	.22			.68	.22			.90				.22				9.74			
Number of sick-days	13				10				15				1				3.14			
Average number sick daily	.08				.02				.11								.85			
Average number sick daily per M	.01								.02								.19			
Average duration of treatment	6.05				3.33				3.75				1				7.30			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Despatch.				Franklin.				Galena.				Gedney.				Kearsarge.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																				
Non-malignant tumors and cysts.																				
Hæmatoma																				
Lipoma																				
Sarcoma																				
Total																				
Ratio per M																				
Number of sick-days																				
Average number sick daily																				
Average number sick daily per M																				
Average duration of treatment																				
Poisons.																				
Alcoholismus					2												1			
Delirium tremens																				
Ebriositas																	13			
Venenatio																	1			
Vulnus venenatum																	1			
Total					2												16			
Ratio per M					.45												3.63			
Number of sick-days					8												38			

Average number sick daily					.02											.10			
Average number sick daily per M																.01			
Average duration of treatment					4											2.37			
Violent diseases and deaths.																			
Abrasio								1				1				9			
Ambustio												1				1			
Concussio cerebri																			
Congelatio																			
Contusio	3				2											13			
Fractura					2		1	7								1			
Fractura cranii et compressio cerebri								1											
Luxatio	1	1						1								1			
Stremma	2				4	1		1				2	1			15			1
Submersio																1			
Vulnus contusum					1											5			
Vulnus incisum	2				1											1			
Vulnus lacceratum					2							1				1			
Vulnus punctum					2			1								2			
Vulnus sclopetarium					1														
Foreign body in pharynx																			
Total	8	1			15	1	1	12				4	1			50			1
Ratio per M	1.81	.22			3.40	.22	.22	2.72				.90	.22			11.57			.22
Number of sick-days	51				123			90				71				308			
Average number of sick daily	.33				30			.70				.19				1.06			
Average number of sick daily per M	.07				.06			.18				.04				.22			
Average duration of treatment	6.37				8.20			7.5				17.75				7.36			
Grand aggregate	34	8			79	10	1	73	5			22	1			2.86	7		1
Ratio per M	7.76	1.81			18.17	4.3	.22	16.79	1.13			4.99	.22			64.89	1.58		.22
Number sick-days	152				506			344				154				1752			
Average number sick daily	.41				1.54			.93				.42				4.78			
Average number sick daily per M	.09				.35			.21				.09				1.08			
Average duration of treatment	4.47				7.16			4.71				7				6.12			

TABLE III.—*Showing the number of cases, the invalided and the dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations / Diseases and injuries.	Lehigh.				Mahopac.				Manhattan.				Michigan.				Minnesota.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES.																				
1.—*Zymotic diseases.*																				
Catarrhus epidemicus	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cynanche parotidea	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Denguis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Diphtheria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Erysipelas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Febricula	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	1	.....	.....
Febris continua simplex	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	1	.....	.....
Febris enterica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Febris intermittens	2	.....	.....	.....	2	1	.....	.....	2	.....	.....	.....	27	.....	.....	.....	8	.....	.....	.....
Febris remittens	3	1	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Morbilli	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pertussis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Scarlatina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Vaccina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	.....	.....	.....
Varioloides	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Total	5	1	.....	.....	2	1	.....	.....	3	1	.....	.....	27	.....	.....	.....	28	3	.....	.....
Ratio per M	1.13	.22	.....	.....	.45	.22	.....	.....	.68	.22	.....	.....	6.22	.....	.....	.....	6.45	.68	.....	.....
Number of sick-days	33	.....	.....	.....	7	.....	.....	.....	9	.....	.....	.....	188	.....	.....	.....	213	.....	.....	.....
Average number sick daily	.09	.....	.....	.....	.01	.....	.....	.....	.02	.....	.....	.....	.51	.....	.....	.....	.58	.....	.....	.....
Average number sick daily per M	.02	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.11	.....	.....	.....	.13	.....	.....	.....
Average duration of treatment	6.6	.....	.....	.....	3.5	.....	.....	.....	3	.....	.....	.....	6.96	.....	.....	.....	7.60	.....	.....	.....

12.—*Constitutional diseases.*																			
Adynamia																11	6	1	
Anæmia																			
Atrophia																			
Carcinoma																			
Diabetes																			
Hydrops												1							
Lumbago																5			
Myalgia																			
Podagra																			
Rheumatismus acutus	1				1							14				9	1		
Rheumatismus chronicus												1				5	4		
Rheumatismus subacutus																25	8	1	
Scrofula																			
Senectus																			
Syphilis primitiva												3				14	8		
Syphilis consecutiva																			
Torticollis																1			
Tuberculosis																			
Total	1				1							9				70	27	2	
Ratio per M	.22				.22							4.31				15.88	6.22	.45	
Number of sick-days	4				10							269				850			
Average number sick daily	.01				.02							.73				.23			
Average number sick daily per M												.15				.05			
Average duration of treatment	4				10							14.10				7.01			
LOCAL DISEASES.																			
1.—*Diseases of the nervous system.*																			
Apoplexia																			
Asthenia																			
Cephalalgia																1			
Dementia																			
Epilepsia												1				1			
Insolatio																			
Melancholia																1	1		
Meningitis																			
Monomania																			
Nausea marina																			
Neuralgia												1				9	2		
Nostalgia																			
Paralysis																			
Pleurodynia																4			
Sciatica																			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations / Diseases and injuries.	Lehigh.				Mahopac.				Manhattan.				Michigan.				Minnesota.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
1.—*Diseases of the nervous system*—Cont'd.																				
Tetanus																				
Vertigo																				
Total													2				16	3		
Ratio per M													.45				3.63	.68		
Number of sick-days													8				71			
Average number sick daily													.02				.19			
Average number sick daily per M																	.04			
Average duration of treatment													4				4.43			
2.—*Diseases of the eye.*																				
Amaurosis																	1		1	
Conjunctivitis																	9			
Hemeralopia																				
Hordeolum																				
Iritis																				
Keratitis																	1			
Myopia																				
Ophthalmia																	6			
Ophthalmia gonorrhœica																				
Pterygium																				
Retinitis																				
Sclerotitis																				

Iridoncus																				
Total																17		1		
Ratio per M																3.85		.22		
Number of sick-days																132				
Average number sick daily																.36				
Average number sick daily per M																.08				
Average duration of treatment																7.76				
3.—*Diseases of the ear.*																				
Otalgia																1				
Otitis																3				
Otorrhœa																				
Surditas																				
Total																4				
Ratio per M																.90				
Number of sick-days																21				
Average number sick daily																.05				
Average number sick daily per M																				
Average duration of treatment																5.25				
4.—*Diseases of the teeth.*																				
Odontalgia													1			1				
Parulis																				
Total													1			1				
Ratio per M													.22			.22				
Number of sick-days													4							
Average number sick daily													.01							
Average number sick daily per M																				
Average duration of treatment													4							

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations / Diseases and injuries.	Lehigh.				Mahopac.				Manhattan.				Michigan.				Minnesota.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
5.—*Diseases of the circulatory system.*																				
Aneurysma																				
Angina pectoris																				
Hypertrophia cordis																				
Morbi valvularum cordis																	1	1		
Palpitatio																	2	1		
Pericarditis																	1			
Syncope																				
Varix																	1	1		
Total																	5	3		
Ratio per M																	1.13	.68		
Number of sick-days																	52			
Average number sick daily																	.14			
Average number sick daily per M																	.03			
Average duration of treatment																	10.4			
6.—*Diseases of the absorbent system.*																				
Adenitis																	2	1		
Lymphangitis																	1			
Total																	.3	1		

Ratio per M																.68	.22		
Number of sick-days																19			
Average number sick daily																.05			
Average number sick daily per M																.01			
Average duration of treatment																6.33			
7.—Diseases of the respiratory system.																			
Apnœa																			
Asthma																2	1		
Bronchitis acuta	1											5				10	1	1	
Bronchitis chronica					1	1										1	1		
Catarrhus	1											7				25			
Catarrhus bronchialis																48	4		
Congestio pulmonalis																			
Hæmoptysis																1	1		
Laryngitis																2	1		
Phthisis pneumonica acuta																			
Phthisis pneumonica chronica																			
Pleuritis																3			
Pneumonia																19	2		
Total	2				1	1						12				111	11	1	
Ratio per M	.45				.22	.22						2.72				15.18	2.49	.22	
Number of sick-days	12				2							84				1236			
Average number sick daily	.03											.22				3.37			
Average number sick daily per M												.04				.76			
Average duration of treatment	6				2							7				11.13			
8.—Diseases of the digestive system.																			
Cholera morbus																22			
Colica																4			
Constipatio	1											1				1			
Diarrhœa acuta												5				83		1	
Diarrhœa chronica																2	2		
Dysenteria acuta																1	1		
Dysenteria chronica																			
Dyspepsia												1				1			
Enteritis																			
Fauces ulcerosa																			
Fistula in ano																			
Gastritis	1															1			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Lehigh.				Mahopac.				Manhattan.				Michigan.				Minnesota.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
8.—*Diseases of the digestive system*—Cont'd.																				
Gastrodynia																				
Hæmorrhois	2	1															4			
Hepatitis acuta																				
Hepatitis chronica																				
Hernia																	2			
Icterus																				
Perityphlitis																				
Pharyngitis	1																150	2		
Splenitis																				
Stomatitis																	2			
Tonsillitis													7				62	1		
Tinea																	1			
Vermes																				
Total	5	1											14				336	6	1	
Ratio per M	1.13	.22											3.17				76.24	1.36	.22	
Number of sick-days	16												103				1916			
Average number sick daily	.04												28				5.23			
Average number sick daily per M													.06				1.16			
Average duration of treatment	3.2												7.35				5.70			
9.—*Diseases of the genito-urinary system.*																				
Albuminaria																				
Balanitis																	1			
Calculus																				
Chancroides																				

| | | |

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Lehigh.				Mahopac.				Manhattan.				Michigan.				Minnesota.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																				
9.—*Diseases of the genito-urinary system*—Continued.																				
Cellulitis																				
Dermatitis																				
Ecthyma																				
Eczema																				
Epithelioma																				
Erythema																				
Furunculus													5				14			
Herpes																				
Impetigo																				
Lichen																	1			
Onychia																				
Paronychia																	2			
Purpura																				
Psoriasis																				
Tinea																				
Unguis involutis																	1			
Ulcus																	11			
Urticaria																	1			
Total													5				48			
Ratio per M													1.13				10.88			
Number of sick-days													40				373			
Average number sick daily													.10				1.01			
Average number sick daily per M													.02				.22			
Average duration of treatment													8				7.77			

| | | |

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Lehigh.				Mahopac.				Manhattan.				Michigan.				Minnesota.			
Diseases or injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																				
Violent diseases and deaths—Continued.																				
Vulnus incisum	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	10	.....	.....	.....
Vulnus laceratum	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12	1	.....	.....
Vulnus punctum	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Vulnus sclopetarium	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
Foreign body in pharynx	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	2	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	15	.....	.....	.....	131	6	1	.....
Ratio per M	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.40	.....	.....	.....	29.72	1.36	.22	.....
Number of sick-days	18	.....	.....	.....	7	.....	.....	.....	.....	.....	.....	.....	122	.....	.....	.....	1108	.....	.....	.....
Average number sick daily	.04	.....	.....	.....	.01	.....	.....	.....	.....	.....	.....	.....	.33	.....	.....	.....	3.02	.....	.....	.....
Average number sick daily per M	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.07	.....	.....	.....	.68	.....	.....	.....
Average duration of treatment	9	.....	.....	.....	7	.....	.....	.....	.....	.....	.....	.....	8.13	.....	.....	.....	8.45	.....	.....	.....
Grand aggregate	15	2	.....	.....	5	2	.....	.....	.3	1	.....	.....	96	.....	.....	.....	821	78	6	.....
Ratio per M	3.40	.45	.....	.....	1.13	.45	.....	.....	.68	.22	.....	.....	21.78	.....	.....	.....	28.62	17.69	1.36	.....
Number sick-days	83	.....	.....	.....	26	.....	.....	.....	9	.....	.....	.....	829	.....	.....	.....	6457	.....	.....	.....
Average number sick daily	.22	.....	.....	.....	.07	.....	.....	.....	.02	.....	.....	.....	2.26	.....	.....	.....	17.64	.....	.....	.....
Average number sick daily per M	004	.....	.....	.....	.01	.....	.....	.....	.....	.....	.....	.....	.51	.....	.....	.....	4	.....	.....	.....
Average duration of treatment	5.54	.....	.....	.....	5.2	.....	.....	.....	3	.....	.....	.....	8.63	.....	.....	.....	7.86	.....	.....	.....

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations / Diseases and injuries.	Montauk.				New Hampshire.				Nipsic.				Passaic.				Portsmouth.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES.																				
1.—*Zymotic diseases.*																				
Catarrhus epidemicus																				
Cyanche parotides																				
Dengula					5															
Diphtheria																				
Erysipelas																	1			
Febricula									2											
Febris continua simplex									4								24		1	
Febris enterica																	3			2
Febris intermittens	1				4				3				4	1			1			
Febris remittens					2												2	1		
Morbilli																				
Pertussis																				
Scarlatina																				
Vaccina																	2			
Varioloides																				
Total	1				11				9				4	1			33	1	1	2
Ratio per M	1.2				2.49				2.04				.90	.22			7.48	.22	.22	.45
Number of sick-days	4				58				21				12				227			
Average number sick daily	.01				.15				.23				.03				.62			
Average number sick daily per M					.03				.05								.14			
Average duration of treatment	4				5.27				2.33				3				6.81			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Montauk.				New Hampshire.				Nipsic.				Passaic.				Portsmouth.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES—Continued.																				
2—*Constitutional diseases.*																				
Adynamia					5				1	1			1							
Anæmia																				
Atrophia																				
Carcinoma													1	1						
Diabetes																				
Hydrops																				
Lumbago																				
Myalgia																				
Podagra					3				1											
Rheumatismus acutus	1				1								1				1	1		
Rheumatismus chronicus					1				11	5			4	1			17	2		
Rheumatismus subacutus																				
Scrofula																				
Senectus																				
Syphilis primitiva					2				2	1							3	0	1	
Syphilis consecutiva					2	1											4	2	1	
Torticollis																				
Tuberculosis																				
Total	1				14	1				15	7			7	2			25	5	2
Ratio per M	.22				3.17	.22			3.40	1.58			1.58	.45			5.67	1.13	.45	
Number of sick-days	12				190				192				43				457			
Average number sick daily	.02				.51				2.10				11				1.24			
Average number sick daily per M					.11				.47				.02				.28			
Average duration of treatment	12				13.57				12.8				6.14				14.24			

LOCAL DISEASES.

1.—*Diseases of the nervous system.*

Apoplexia																			
Asthenia																			
Cephalalgia					5				3								1		
Dementia																			
Epilepsia									2	1							2		1
Insolatio																			
Melancholia																			
Meningitis																			
Monomania																			
Nausea marina									11	1							1		
Neuralgia					2				1								2		
Nostalgia																			
Paralysis																			
Pleurodynia									1								2	1	
Sciatica																			
Tetanus																			
Vertigo													1						
Total					7				18	2			1				8	1	1
Ratio per M					1.58				4.09	.45			.22				1.81	.22	.22
Number of sick-days					20				108				1				116		
Average number sick daily					.05				1.18								.31		
Average number sick daily per M					.01				.26								.07		
Average duration of treatment					2.85				6				1				14.5		

2.—*Diseases of the eye.*

Amaurosis																			
Conjunctivitis									1										
Hemeralopia																			
Hordeolum																	1		
Iritis					2	1													
Keratitis																			
Myopia																			
Ophthalmia																			
Ophthalmia gonorrhœica																			
Pterygium																			
Retinitis																			
Sclerotitis																			
Uvido																			
Total					2	1			1								1		

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations / Diseases and injuries.	Montauk.				New Hampshire.				Nipsic.				Passaic.				Portsmouth.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
2.—*Diseases of the eye*—Continued.																				
Ratio per M					.45	.22			.22								.22			
Number of sick-days					81				1								2			
Average number sick daily									.22											
Average number sick daily per M					.4															
Average duration of treatment					40.5				1								2			
3.—*Diseases of the ear.*																				
Otalgia																				
Otitis																	1			
Otorrhœa																				
Surditas																	1	1		
Total																	2	1		
Ratio per M																	.45	.22		
Number of sick-days																	20			
Average number sick daily																	.05			
Average number sick daily per M																				
Average duration of treatment																	10			

4.—*Diseases of the teeth.*																			
Odontalgia																			
Farulis									2										
Total									1										
Ratio per M									.22										
Number of sick-days									2										
Average number sick daily									.02										
Average number sick daily per M																			
Average duration of treatment									2										
5.—*Diseases of the circulatory system.*																			
Aneurysma																			
Angina pectoris																			
Hypertrophia cordis																			
Morbi valvularum cordis																			
Palpitatio																			
Pericarditis																			
Syncope					1														
Varix																			
Total					1														
Ratio per M					.22														
Number of sick-days					3														
Average number sick daily																			
Average number sick daily per M																			
Average duration of treatment					3														
6.—*Diseases of the absorbent system.*																			
Adenitis					1				1				2	2			1		
Lymphangitis																			
Total					1				1				2	2			1		
Ratio per M					.22				.22				.45	.45			.22		
Number of sick-days					29				3				6				3		

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Montauk.				New Hampshire.				Nipsic.				Passaic.				Portsmouth.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases or injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
6. *Diseases of the absorbent system*—Cont'd.																				
Average number sick daily					.07				.03				.01							
Average number sick daily per M					.01															
Average duration of treatment					29				3				3				3			
7.—*Diseases of the respiratory system.*																				
Apnœa																				
Asthma																				
Bronchitis acuta					2												4			
Bronchitis chronica																	2	1		
Catarrhus					8				16								1			
Catarrhus bronchialis																				
Congestio pulmonalis																				
Hæmoptysis					1								1	1			3	3		
Laryngitis																	3			
Phthisis pneumonica acuta																				
Phthisis pneumonica chronica																	2	2		
Pleuritis	1	1							1	1										
Pneumonia					1				1											
Total	1	1			12				18	1			1				15	6		
Ratio per M	.22	.22			2.72				4.09	.22			.22				3.40	1.36		
Number of sick-days	2				51				44				2				153			
Average number sick daily					13				.48								.41			

Average number sick daily per M					.02				.10								.09			
Average duration of treatment	2				4.25				2.44				2				10.2			
8.—Diseases of the digestive system.																				
Cholera morbus					1												4			
Colica					2				1								3			
Constipatio																	8			
Diarrhœa acuta					3				5				1				6			
Diarrhœa chronica																				
Dysenteria acuta					1												11	1		
Dysenteria chronica																				
Dyspepsia																				
Enteritis									1	1										
Fauces ulcerosa																				
Fistula in ano																	1	1		
Gastritis																				
Gastrodynia																				
Hæmorrhois					1				1	1										
Hepatitis acuta																				
Hepatitis chronica																				
Hernia					1								1				1	1		
Icterus																				
Perityphlitis																				
Pharyngitis																				
Splenitis																				
Stomatitis	1																			
Tonsillitis					1												17	3		
Tinea																				
Vermes																				
Total	1				11				8	2			2				51	6		
Ratio per M	.22				2.49				1.81	.45			.45				11.57	1.36		
Number of sick-days	2				72				20				5				230			
Average number sick daily					.19				.21				.01				.62			
Average number sick daily per M					.04				.04								.14			
Average duration of treatment	2				6.54				2.5				2.5				4.50			
9.—Diseases of the genito-urinary system.																				
Albuminuria																				
Balanitis																				
Calculus																				
Chancroides																				
Cystitis																				
Dysuria																	1			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c. Continued.*

Vessels or stations	Montauk.				New Hampshire.				Nipsic.				Passaic.				Portsmouth.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases or injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
9.—*Diseases of the genito-urinary system*—C'd.																				
Enuresis																	2			
Epididymetis																				
Gonorrhœa					2				1								3	2		
Hæmaturia																				
Hydrocele																				
Nephritis																				
Orchitis					1				2								2			
Paraphymosis																				
Phymosis																				
Spermatorrhœa																				
Urethræ strictura																	1			
Total					3				3								9	4		
Ratio per M					.68				.68								2.04	.90		
Number of sick-days					16				28								95			
Average number sick daily					.04				.30								.25			
Average number sick daily per M									.06								.05			
Average duration of treatment					5.33				9.33								10.55			
10.—*Diseases of the locomotive system.*																				
Arthritis																				
Hydrops articulorem																				
Necrosis									1	1										

Ostitis																			
Periostitis																			
Synovitis																			
Total								1	1										
Ratio per M								.22											
Number of sick-days								71											
Average number sick daily								.78											
Average number sick daily per M								.17											
Average duration of treatment								71											
11.—*Diseases of the integumentary system.*																			
Abscesses								3								1			
Acne																			
Anthrax																1			
Cellulitis																			
Dermatitis																			
Ecthyma																			
Eczema																			
Epithelioma																1	1		
Erythema																			
Furunculus								6								29			
Herpes																			
Impetigo																			
Lichen																			
Onychia																			
Paronychia								3								3			
Purpura																			
Psoriasis																2			
Tinea																			
Unguis involutis																			
Ulcus					1							1				1	1		
Urticaria																			
Total					1			12				1				38	1	1	
Ratio per M					.22			2.72				.22				8.60	.22	.22	
Number of sick-days					6			104				1				303			
Average number sick daily					.01			1.13								.82			
Average number sick daily per M								25								.18			
Average duration of treatment					6			8.66				1				7.97			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—CONTINUED.

Vessels or stations	Montauk.				New Hampshire.				Nipsic.				Passaic.				Portsmouth.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
Non-malignant tumors and cysts.																				
Hæmatoma																				
Lipoma																				
Sarcoma																				
Total																				
Ratio per M																				
Number sick-days																				
Average number sick daily																				
Average number sick daily per M																				
Average duration of treatment																				
Poisons.																				
Alcoholismus																				
Delirium tremens					1								3	1			2			
Ebriositas																	1	1		
Venenatio																				
Vulnus venenatum																				
Total					1								3	1			3	1		
Ratio per M					.22								.68	.22			.68	.22		
Number of sick-days					4								5				10			

Average number sick daily				.01								.01				.02			
Average number sick daily per M																			
Average duration of treatment				4								1.66				3.33			
Violent diseases and deaths.																			
Abrasio								1								1			
Ambustio				2															
Concussio cerebri																			
Congelatio				1															
Contusio				3				1								14	1	1	
Fractura								1	1							1	1		
Fractura cranii et compressio cerebri																			
Luxatio																			
Stremma				2				2				1				8			
Submersio																			
Vulnus contusum				1				9	1							3	1	1	
Vulnus incisum																6			
Vulnus laceratum				4				1	1										
Vulnus punctum				1												2			
Vulnus sclopetarium																			
Foreign body in pharynx																			
Total				14				15	3			1				35	3	2	
Ratio per M				3.17				3.4	0.68			22				7.94	.68	.45	
Number of sick-days				77				120				3				303			
Average number sick daily				.21				1.31								.82			
Average number sick daily per M				.04				.29								.18			
Average duration of treatment				5.5				8				3				8.65			
Grand aggregate	4	1		78	2			102	16			22	7			221	29	7	2
Ratio per M	.90	.22		15.43	.45			23.14	3.62			4.99	1.58			50.14	6.68	1.58	.45
Number sick-days	20			607				714				78				1919			
Average number sick daily	.05			1.65				1.95				.21				5.24			
Average number sick daily per M	.01			37				.44				.04				1.19			
Average duration of treatment	5			7.78				7				3.54				8.68			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Montauk.				New Hampshire.				Nipsic.				Passaic.				Portsmouth.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
2.—*Diseases of the eye*—Continued.																				
Ratio per M	.....	.....	.....	.....	.45	.22	.....	.....	.22	.....	.....	.....	.....	.....	.....	.....	.22	.....	.....	.....
Number of sick-days	.....	.....	.....	.....	81	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
Average number sick daily	.....	.....	.....	.....	.....	.....	.....	.....	.22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Average number sick daily per M	.....	.....	.....	.....	.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Average duration of treatment	.....	.....	.....	.....	40.5	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
3.—*Diseases of the ear.*																				
Otalgia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Otitis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Otorrhœa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Surditas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....
Total	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	1	.....	.....
Ratio per M	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.45	.22	.....	.....
Number of sick-days	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20	.....	.....	.....
Average number sick daily	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.05	.....	.....	.....
Average number sick daily per M	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Average duration of treatment	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	.....	.....	.....

4.—*Diseases of the teeth.*																			
Odontalgia									2										
Farulis									1										
Total									.22										
Ratio per M									2										
Number of sick-days									.02										
Average number sick daily																			
Average number sick daily per M									2										
Average duration of treatment																			
5.—*Diseases of the circulatory system.*																			
Aneurysma																			
Angina pectoris																			
Hypertrophia cordis																			
Morbi valvularum cordis																			
Palpitatio																			
Pericarditis																			
Syncope					1														
Varix																			
Total					1														
Ratio per M					.22														
Number of sick-days					3														
Average number sick daily																			
Average number sick daily per M																			
Average duration of treatment					3														
6.—*Diseases of the absorbent system.*																			
Adenitis					1				1				2	2			1		
Lymphangitis																			
Total					1				1				2	2			1		
Ratio per M					.22				.22				.45	.45			.22		
Number of sick-days					29				3				6				3		

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations / Diseases or injuries.	Montauk.				New Hampshire.				Nipsic.				Passaic.				Portsmouth.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
6.—*Diseases of the absorbent system*—Cont'd.																				
Average number sick daily					.07				.03				.01							
Average number sick daily per M					.01															
Average duration of treatment					29				3				3				3			
7.—*Diseases of the respiratory system.*																				
Apnœa																				
Asthma																				
Bronchitis acuta					2												4			
Bronchitis chronica																	2	1		
Catarrhus					8				16								1			
Catarrhus bronchialis																				
Congestio pulmonalis																				
Hæmoptysis					1								1	1			3	3		
Laryngitis																	3			
Phthisis pneumonica acuta																				
Phthisis pneumonica chronica																	2	2		
Pleuritis	1	1							1	1										
Pneumonia					1				1											
Total	1	1			12				18	1			1				15	6		
Ratio per M	.22	.22			2.72				4.09	.22			.22				3.40	1.36		
Number of sick-days	2				51				44				2				153			
Average number sick daily					13				.48								.41			

Average number sick daily per M					.02				.10								.09			
Average duration of treatment	2				4.25				2.44				2				10.2			
8.—Diseases of the digestive system.																				
Cholera morbus					1												4			
Colica					2				1								3			
Constipatio																	8			
Diarrhœa acuta					3				5				1				6			
Diarrhœa chronica																				
Dysenteria acuta					1												11	1		
Dysenteria chronica																				
Dyspepsia																				
Enteritis									1	1										
Fauces Icerosa																				
Fistula in ano																	1	1		
Gastritis																				
Gastrodynia																				
Hæmorrhois					1				1	1										
Hepatitis acuta																				
Hepatitis chronica																				
Hernia					1								1				1	1		
Icterus																				
Perityphlitis																				
Pharyngitis																				
Splenitis																				
Stomatitis	1																			
Tonsillitis					1												17	3		
Tinea																				
Vermes																				
Total	1				11				8	2			2				51	6		
Ratio per M	.22				2.49				1.81	.45			.45				11.57	1.36		
Number of sick-days	2				72				20				5				230			
Average number sick daily					.19				.21				.01				.62			
Average number sick daily per M					.04				.04								.14			
Average duration of treatment	2				6.54				2.5				2.5				4.50			
9.—Diseases of the genito-urinary system.																				
Albuminuria																				
Balanitis																				
Calculus																				
Chancroides																				
Cystitis																				
Dysuria																	1			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Montauk.				New Hampshire.				Nipsic.				Passaic.				Portsmouth.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases or injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
9.—*Diseases of the genito-urinary system*—C'd.																				
Enuresis																	2			
Epididymetis																				
Gonorrhœa					2				1								3	2		
Hæmaturia																				
Hydrocele																				
Nephritis																				
Orchitis					1				2								2			
Paraphymosis																				
Phymosis																				
Spermatorrhœa																				
Urethræ strictura																	1			
Total					3				3								9	4		
Ratio per M					.68				.68								2.04	.90		
Number of sick-days					16				28								95			
Average number sick daily					.04				.30								.25			
Average number sick daily per M									.06								.05			
Average duration of treatment					5.33				9.33								10.55			
10.—*Diseases of the locomotive system.*																				
Arthritis																				
Hydrops articulorem																				
Necrosis									1	1										

Ostitis																			
Periostitis																			
Synovitis																			
Total								1	1										
Ratio per M								.22											
Number of sick-days								71											
Average number sick daily								.78											
Average number sick daily per M								.17											
Average duration of treatment								71											
11.—*Diseases of the integumentary system.*																			
Abscessus								3								1			
Acne																			
Anthrax																1			
Cellulitis																			
Dermatitis																			
Ecthyma																			
Eczema																			
Epithelioma																1	1		
Erythema																			
Furunculus								6								29			
Herpes																			
Impetigo																			
Lichen																			
Onychia																			
Paronychia								3								3			
Purpura																			
Psoriasis																2			
Tinea																			
Unguis involutis																			
Ulcus					1							1				1	1		
Urticaria																			
Total					1			12				1				38	1	1	
Ratio per M					.22			2.72				.22				8.60	.22	.22	
Number of sick-days					6			104				1				303			
Average number sick daily					.01			1.13								.82			
Average number sick daily per M								25								.18			
Average duration of treatment					6			8.66				1				7.97			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Montauk.				New Hampshire.				Nipsic.				Passaic.				Portsmouth.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
Non-malignant tumors and cysts.																				
Hæmatoma																				
Lipoma																				
Sarcoma																				
Total																				
Ratio per M																				
Number sick-days																				
Average number sick daily																				
Average number sick daily per M																				
Average duration of treatment																				
Poisons.																				
Alcoholismus																				
Delirium tremens					1								3	1			2			
Ebriositas																	1	1		
Venenatio																				
Vulnus venenatum																				
Total					1								3	1			3	1		
Ratio per M					.22								.68	.22			.68	.22		
Number of sick-days					1								5				10			

Average number sick daily					.01							.01				.02			
Average number sick daily per M																			
Average duration of treatment					4							1.66				3.33			
Violent diseases and deaths.																			
Abrasio								1								1			
Ambustio					2														
Concussio cerebri																			
Congelatio					1														
Contusio					3			1								14	1	1	
Fractura								1	1							1	1		
Fractura cranii et compressio cerebri																			
Luxatio																			
Stremma					2			2				1				8			
Submersio																			
Vulnus contusum					1			9	1							3	1	1	
Vulnus incisum																6			
Vulnus laceratum					4			1	1										
Vulnus punctum					1											2			
Vulnus sclopetarium																			
Foreign body in pharynx																			
Total					14			15	3			1				35	3	2	
Ratio per M					3.17			3.4	0.68			22				7.94	.68	.45	
Number of sick-days					77			120				3				303			
Average number sick daily					.21			1.31								.82			
Average number sick daily per M					.04			.29								.18			
Average duration of treatment					5.5			8				3				8.65			
Grand aggregate	4	1			78	2		102	16			22	7			221	29	7	2
Ratio per M	.90	.22			15.43	.45		23.14	3.62			4.99	1.58			50.14	6.68	1.58	.45
Number sick-days	20				607			714				78				1919			
Average number sick daily	.05				1.65			1.95				.21				5.24			
Average number sick daily per M	.01				37			.44				.04				1.19			
Average duration of treatment	5				7.78			7				3.54				8.68			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Powhatan.				Rio Bravo.				Saratoga.				St. Louis.				Tallapoosa.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
5.—*Diseases of the circulatory system.*																				
Aneurysma																				
Angina pectoris																				
Hypertrophia cordis																				
Morbi valvularum cordis	1	1							1											
Palpitatio									1								1			
Pericarditis									1	1							1	1		
Syncope																				
Varix	1																			
Total	2	1							3	1							2	1		
Ratio per M	.45	.22							.68	.22							.45	.22		
Number of sick-days	2								50								10			
Average number sick daily									.13								.02			
Average number sick daily per M									.02											
Average duration of treatment	1								16.66								5			
6.—*Diseases of the absorbent system.*																				
Adenitis	4																1			
Lymphangitis																				
Total	4																1			

2.—*Constitutional diseases.*																				
Adynamia									2	1			1				2	1		
Anæmia																				
Atrophia																				
Carcinoma																				
Diabetes									1	1										
Hydrops	1								1											
Lumbago									1											
Myalgia																				
Podagra													2	1			1			
Rheumatismus acutus	10	2											1				9	1		
Rheumatismus chronicus	9	1			2				3	1			2				1			
Rheumatismus subacutus																				
Scrofula																				
Senectus	1	1																		
Syphilis primitiva	13	2			1				3				3	1			3			
Syphilis consecutiva	3	2											1	1			3	1		
Torticollis																				
Tuberculosis																				
Total	37	8			3				11	3			10	3			19	3		
Ratio per M	8.38	1.81			.18				2.49	.68			2.26	.68			4.31	.68		
Number of sick-days	406				34				151				106				121			
Average number sick daily	1.08				.18				.41				.28				.33			
Average number sick daily per M	.24				.04				.09				.06				.07			
Average duration of treatment	10.97				11.33				13.72				10.6				6.36			
LOCAL DISEASES.																				
1. *Diseases of the nervous system.*																				
Apoplexia																				
Asthenia																				
Cephalalgia	6	1			1				1	1										
Dementia																				
Epilepsia																				
Insolatio																				
Melancholia	1	1																		
Meningitis																				
Monomania																				
Nausea marina																				
Neuralgia					1	1							2				3			
Nostalgia																				
Paralysis																	1			
Pleurodynia	1																			
Sciatica	1																			

Table showing the number of cases, the discharged to duty, the invalided and the dead for each disease, &c.—Continued.

Vessels or stations	Powhatan.				Rio Bravo.				Saratoga.				St. Louis.				Tallapoosa.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
1.—*Diseases of the nervous system*—Cont'd.																				
Tetanus																				
Vertigo																				
Total	9	2			2	1			1	1			2				4			
Ratio per M	2.04	.45			.45	.22			.22	.22			.45				.90			
Number of sick-days	36				17				4				10				17			
Average number sick daily	.09				.09				.01				.02				.04			
Average number sick daily per M	.02				.02															
Average duration of treatment	4				85				4				5				4.25			
2.—*Diseases of the eye.*																				
Amaurosis																				
Conjunctivitis	5								1								2			
Hemeralopia	1	1																		
Hordeolum																				
Iritis													1							
Keratitis																				
Myopia																				
Opthalmia																				
Opthalmia gonorrhœica																				
Pterygium																				
Retinitis																				

Sclerotitis																						
Irido	1	1																				
Total	7	2							1				1				2					
Ratio per M	1.58	.45							.22				.22				.45					
Number of sick-days	51								8				11				7					
Average number sick daily	.13								.02				.03				.01					
Average number sick daily per M	.02																					
Average duration of treatment	7.28								8				11				3.5					
3.—Diseases of the ear.																						
Otalgia																						
Otitis	3																					
Otorrhœa																						
Surditas																	1					
Total	3																1					
Ratio per M	.68																.22					
Number of sick-days	17																1					
Average number sick daily	.04																					
Average number sick daily per M																						
Average duration of treatment	5.66																1					
4.—Diseases of the teeth.																						
Odontalgia					1																	
Parulis	1																					
Total	1				1																	
Ratio per M	.22				.22																	
Number of sick-days	4				1																	
Average number sick daily	.01																					
Average number sick daily per M																						
Average duration of treatment	4				1																	

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Powhatan.				Rio Bravo.				Saratoga.				St. Louis.				Tallapoosa.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																				
5.—*Diseases of the circulatory system.*																				
Aneurysma																				
Angina pectoris																				
Hypertrophia cordis																				
Morbi valvularum cordis	1	1							1											
Palpitatio									1								1			
Pericarditis									1	1							1	1		
Syncope																				
Varix	1																			
Total	2	1							3	1							2	1		
Ratio per M	.45	.22							.68	.22							.45	.22		
Number of sick-days	2								50								10			
Average number sick daily									.13								.02			
Average number sick daily per M									.02											
Average duration of treatment	1								16.66								5			
6.—*Diseases of the absorbent system.*																				
Adenitis	4																1			
Lymphangitis																				
Total	4																1			

Ratio per M	.96																		.22			
Number of sick-days	37																		11			
Average number sick daily	10																		.03			
Average number sick daily per M	.02																					
Average duration of treatment	9.25																		11			
7.—Diseases of the respiratory system.																						
Apnœa																						
Asthma	1								1	1												
Bronchitis acuta	1				4				6	1			3						4			
Bronchitis chronica									4	3			1		1							
Catarrhus	11				9				3										10			
Catarrhus bronchialis																						
Congestio pulmonalis																						
Hæmoptysis	1												1	1								
Laryngitis	3																					
Phthisis pneumonica acuta									1	1												
Phthisis pneumonica chronica									1	1												
Pleuritis									2	1			2	1					1			
Pneumonia									1	1			1	1								
Total	17				13				19	9			8	3	1				15			
Ratio per M	3.85				2.95				4.31	2.04			1.81	.68	.22				3.40			
Number of sick-days	99				89				250				67						99			
Average number sick daily	.27				.50				.68				.18						.27			
Average number sick daily per M	.06				.11				.15				.04						.06			
Average duration of treatment	5.87				6.84				13.15				8.37						6.6			
8.—Diseases of the digestive system.																						
Cholera morbus	4				7				1										3			
Colica	2				1														6			
Constipatio					3														1			
Diarrhœa acuta	32				1				11				1						9			
Diarrhœa chronica	1								2													
Dysenteria acuta	1								2				1						2			
Dysenteria chronica																						
Dyspepsia	7	1			1																	
Enteritis																						
Fauces ulcerosa	1																					
Fistula in ano									1	1												
Gastritis																						

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Powhatan.				Rio Bravo.				Saratoga.				St. Louis.				Tallapoosa.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases or injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
8. *Diseases of the digestive system*—Continued.																				
Gastrodynia																				
Hæmorrhois	2	1			1				1				1				2	1		
Hepatitis acuta																				
Hepatitis chronica																				
Hernia																				
Icterus									2											
Perityphlitis																				
Pharyngitis	4																			
Splenitis																				
Stomatitis																				
Tonsillitis	12								16				2				4			
Taenia																				
Vermes																				
Total	66	2			14				36	1			5				27	1		
Ratio per M	12.70	.45			3.17				8.16	.22			1.13				6.22	.22		
Number of sick-days	285				18				231				23				101			
Average number sick daily	.77				.10				.63				.06				.27			
Average number sick daily per M	.17				.02				.14				.01				.06			
Average duration of treatment	4.31				1.28				6.41				4.6				3.74			
9.—*Diseases of the genito-urinary system.*																				
Albuminuria																				
Balanitis					1				1											
Calculus																				

| | | |

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Powhatan.				Rio Bravo.				Saratoga.				Saint Louis.				Tallapoosa.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
11.—*Diseases of the integumentary system*—C'td.																				
Dermatitis																				
Ecthyma																				
Eczema									3											
Epithelioma																				
Erythema																				
Furunculus	14								19				4	1			1			
Herpes																				
Impetigo																				
Lichen																				
Onychia													1							
Paronychia	1								4				1				2			
Purpura																				
Psoriasis																				
Tinea	1								2											
Unguis involutis																	1	1		
Ulcus	5																			
Urticaria																				
Total	26				1				43				7	2			5	1		
Ratio per M	5.89				.22				9.74				1.58	.45			1.13	.22		
Number of sick-days	217				20				343				41				38			
Average number sick daily	.59				.11				.93				.11				.10			
Average number sick daily per M	.13				.02				.21				.02				.02			
Average duration of treatment	8.34				20				7.97				5.85				7.6			

Non-malignant tumors and cysts.																			
Hæmatoma																			
Lipoma																			
Sarcoma																			
Total																			
Ratio per M																			
Number of sick days																			
Average number sick daily																			
Average number sick daily per M																			
Average duration of treatment																			
Poisons.																			
Alcoholismus					1							4				3			
Delirium tremens																			
Ebriositas	8				2														
Venenatio																			
Vulnus venenatum					1														
Total	8				4							4				3			
Ratio per M	1.81				.90							.90				.68			
Number of sick-days	13				12							8				7			
Average number sick daily	.02				.06							.02				.01			
Average number sick daily per M					.01														
Average duration of treatment	1.62				3							2				2.5			
Violent diseases and deaths.																			
Abrasio	2				1							1	1			5			
Ambustio																3			
Concussio cerebri					1														
Congelatio																			
Contusio	16				1				6			1				6			
Fractura	2	1							1							2	2		
Fractura cranii et compressio cerebri																			
Luxatio	1	1																	
Strumma	8				1				5	1		3				4			
Submersio									1			1							
Vulnus contusum	19	2			1				3							4			
Vulnus incisum	9								3	2		2							
Vulnus laceratum	1				1				2										

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Powhatan.				Rio Bravo.				Saratoga.				Saint Louis.				Tallapoosa.			
Diseases or injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																				
Violent diseases and deaths—Continued.																				
Vulnus punctum	2																2			
Vulnus sclopetarium									1											
Foreign body in pharynx																				
Total	60	4			6				21	3		2	6	1			30	2		
Rate per M	13.62	.90			1.36				4.76	.68		.45	1.36	.22			6.80	.45		
Number of sick-days	509				34				204				56				188			
Average number sick daily	1.39				.19				.55				.15				.50			
Average number sick daily per M	.31				.04				.12				.03				.11			
Average duration of treatment	8.48				5.66				9.71				9.33				6.26			
Grand aggregate	277	22			47	1			157	22		2	70	11	1		136	9		
Rate per M	62.85	4.99			10.89	.22			35.62	4.99		.45	15.90	2.47	.22		30.86	2.04		
Number of sick-days	2012				239				1610				502				769			
Average number sick daily	5.94				.65				4.39				1.37				2.10			
Average number sick daily per M	1.34				.14				.99				.39				.47			
Average duration of treatment	7.76				5.08				10.75				7.17				5.65			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Tennessee.				Vandalia.				Wabash.				Wyandotte.				Yantic.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES.																				
1.—*Zymotic diseases.*																				
Catarrhus epidemicus																				
Cynanche parotidea	1																			
Denguis																				
Diphtheria																				
Erysipelas	3				1															
Febricula																				
Febris continua simplex					2				5											
Febris enterica					1	1														
Febris intermittens	17	1							4								4			
Febris remittens	1								1											
Morbilli					3															
Pertussis																				
Scarlatina																				
Vaccina																				
Varioloides																				
Total	22	1			7	1			10								4			
Ratio per M	4.99	.22			1.58	.22			2.26								.90			
Number of sick-days	100				44				45								12			
Average number sick daily	.27				.12				.12								.13			
Average number sick daily per M	.06				.02				.02								.02			
Average duration of treatment	4.63				6.28				4.5								3			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Tennessee.				Vandalia.				Wabash.				Wyandotte.				Yantic.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases or injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES—Continued.																				
2.—*Constitutional diseases.*																				
Adynamia	5				8	4	1		4											
Anæmia																				
Atrophia																				
Carcinoma																				
Diabetes																				
Hydrops																				
Lumbago																				
Myalgia																				
Podagra																				
Rheumatismus acutus	12				7	1			4	1										
Rheumatismus chronicus	9				5	1	1		5	1										
Rheumatismus subacutus	1																			
Scrofula					1															
Senectus																				
Syphilis primitiva	4				11	3			2											
Syphilis consecutiva	4	1															2	1		
Torticollis																				
Tuberculosis									1	1										
Total	35	1			32	9	2		16	3							2	1		
Ratio per M	.07	.22			7.94	2.04	.45		.03	.68							.45	.22		
Number of sick-days	181				364				88								41			
Average number of sick daily	.49				.99				.24								.45			

| | | |

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Tennessee.				Vandalia.				Wabash.				Wyandotte.				Yantic.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
2.—*Diseases of the eye*—Continued.																				
Iridoplegia																				
Total	11				1				4	1										
Ratio per M	2.49				.22				.90	.22										
Number of sick-days	74				4				14											
Average number sick daily	.20				.01				.03											
Average number sick daily per M	.04																			
Average duration of treatment	6.72				4				3.5											
3.—*Diseases of the ear.*																				
Otalgia																				
Otitis																				
Otorrhœa																				
Surditas																				
Total																				
Ratio per M																				
Number of sick-days																				
Average number sick daily																				

Average number sick daily per M																			
Average duration of treatment																			
4.—Diseases of the teeth.																			
Odontalgia																			
Parulis	1																		
Total	1																		
Ratio per M	.22																		
Number of sick-days	2																		
Average number sick daily																			
Average number sick daily per M																			
Average duration of treatment	2																		
5.—Diseases of the circulatory system.																			
Aneurysma																			
Angina pectoris																			
Hypertrophia cordis					1														
Morbi valvularum cordis																			
Palpitatio	1	1																	
Pericarditis					1				2		1								
Syncope																			
Varix																			
Total	1	1			2				2		1								
Ratio per M	.22	.22			.45				.45		.22								
Number of sick-days	1				5				34										
Average number sick daily					.01				.09										
Average number sick daily per M									.02										
Average duration of treatment	1				2.5				17										
6.—Diseases of the absorbent system.																			
Adenitis																			
Lymphangitis	8				1	1													
Total	8				1	1													

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Tennessee.				Vandalia.				Wabash.				Wyandotte.				Yantic.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
6.—*Diseases of the absorbent system*—Cont'd.																				
Ratio per M	1.81			.22	.22															
Number of sick-days	87			19																
Average number sick daily	.23			.05																
Average number sick daily per M	.05			.01																
Average duration of treatment	10.87			19																
7.—*Diseases of the respiratory system.*																				
Apnœ																				
Asthma	1																			
Bronchitis acuta																	1			
Bronchitis chronica	14				31	2			4											
Catarrhus	1																			
Catarrhus bronchialis	42																			
Congestio pulmonalis																				
Hæmoptysis									1	1										
Laryngitis									1											
Phthisis pneumonica acuta									1	1										
Phthisis pneumonica chronica	1	1																		
Pleuritis									1											
Pneumonia	3	1		1	1	1			1	1										
Total	62	2		1	32	3			9	3							1			
Ratio per M	14.06	.45		.22	7.25	.68			2.04	.68							.22			

Number of sick-days	391				185				58								6		
Average number sick daily	1.06				.50				.15								.06		
Average number sick daily per M	.24				.11				.03								.01		
Average duration of treatment	6.30				5.78				6.44								6		
8.—Diseases of the digestive system.																			
Cholera morbus	7				6														
Colica	4				5												1		
Constipatio	2	1							1										
Diarrhœa acuta	6				8														
Diarrhœa chronica	1	1															2		
Dysenteria acuta	8				2														
Dysenteria chronica																			
Dyspepsia	1				1														
Enteritis																			
Fauces ulcerosa					2														
Fistula in ano					1		1		1										
Gastritis	1																		
Gastrodynia	1																		
Hæmorrhois	1				1				1	1									
Hepatitis acuta																			
Hepatitis chronica																			
Hernia																			
Icterus	2				3	1													
Perityphlitis																			
Pharyngitis	2								2										
Splenitis									1								1		
Stomatitis																			
Tonsillitis	22				7				7										
Taenia																			
Vermes																			
Total	58	2			36	1	1		13	1							4		
Ratio per M	13.16	.45			8.16	.22	.22		2.95	.22							.90		
Number of sick days	260				132				65								11		
Average number sick daily	.71				.36				.17								.12		
Average number sick daily per M	.16				.08				.03								.02		
Average duration of treatment	4.48				3.66				5								2.75		
9.—Diseases of the genito-urinary system.																			
Albuminuria												1	1						
Balanitis					1														

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Tennessee.				Vandalia.				Wabash.				Wyandotte.				Yantic.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases or injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
9.—*Diseases of genito-urinary system*—Cont'd.																				
Calculus																				
Chancroides	5				1															
Cystitis																				
Dysuria																				
Enuresis					1															
Epididymitis																				
Gonorrhœa	3								2								1			
Hæmaturia	1																			
Hydrocele	1																			
Nephritis																				
Orchitis	6				7				1											
Paraphymosis																				
Phymosis																				
Spermatorrhœa																	1	1		
Urethræ strictura					5		1		2		1						1	1		
Total	16				15		1		5		1		1	1			3	2		
Ratio per M	3.63				3.40		.22		1.13		.22		.22	.22			.68	.45		
Number of sick-days	151				156				18				2				13			
Average number of sick daily	.41				.42				.04								.14			
Average number of sick daily per M.	.09				.09												.03			
Average duration of treatment	9.81				10.4				3.6				2				4.33			
10.—*Diseases of the locomotive system.*																				
Arthritis																				
Hydrops articulorum																				

Necrosis																				
Ostitis																				
Periostitis																				
Synovitis																				
Total																				
Ratio per M																				
Number of sick-days																				
Average number sick daily																				
Average number sick daily per M																				
Average duration of treatment																				
11.—*Diseases of the integumentary system.*																				
Abscessus	15				3				2	1										
Acne																				
Anthrax	2																			
Cellulitis																				
Dermatitis																				
Ecthyma	1																			
Eczema					2															
Epithelioma																				
Erythema	3																			
Furunculus	9				1															
Herpes																				
Impetigo	1																			
Lichen																				
Onychia																				
Paronychia	6																1			
Purpura																				
Psoriasis																				
Tinea																				
Unguis involutis																				
Ulcus	1								1											
Urticaria																				
Total	38				6				3	1							1			
Ratio per M	8.60				1.36				.68	.22							.22			
Number of sick-days	272				55				119								5			
Average number sick daily	.74				.15				.32								.24			
Average number sick daily per M	.16				.03				.07								.05			
Average duration of treatment	7.15				9.16				39.66								5.0			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each vessel, &c.*—Continued.

Vessels or stations	Tennessee.				Vandalia.				Wabash.				Wyandotte.				Yantic.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases or injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES.																				
Non-malignant tumors and cysts.																				
Hæmatoma																				
Lipoma																				
Sarcoma																				
Total																				
Ratio per M																				
Number of sick-days																				
Average number sick daily																				
Average number sick daily per M																				
Average duration of treatment																				
Poisons.																				
Alcoholismus																				
Delirium tremens	6																			
Ebriositas					1				1											
Venenatio					2				2											
Vulnus venenatum																				
Total	6				3				3											
Ratio per M	1.36				68				68											
Number of sick-days	16				15				9											
Average number sick daily	.04				.04				.02											

Average number sick daily per M																			
Average duration of treatment	2.66				5				3										
Violent diseases and deaths.																			
Abrasio	2																		
Ambustio	5																		
Concussio cerebri																			
Congelatio	2	2			1														
Contusio	17				4				6							1			
Fractura		4			1	1			1		1								
Fractura cranii et compressio cerebri	9									1									
Luxatio	1								1										
Stremma	8				8				3							5			
Submersio																			
Vulnus contusum	12				4				2										
Vulnus incisum	6				3														
Vulnus laceratum	2				4				1										
Vulnus punctum	1				2	1													
Vulnus sclopetarium	1																		
Foreign body in pharynx																			
Total	66	6			27	2			14	1	1					6			
Ratio per M	14.98	1.36			6.22	.45			3.17	.22	.22					1.36			
Number of sick-days	665				221				68							29			
Average number sick daily	1.81				.60				.18							.31			
Average number sick daily per M	.41				.13				.04							.07			
Average duration of treatment	10.07				8.18				4.85							4.83			
Grand aggregate	342	15		1	172	19	4		82	10	4		1	1		26	3		
Ratio per M	77.60	3.40		.22	39.05	4.31	.90		18.60	2.26	.90		.22	.22		5.89	.68		
Number of sick-days	2,306				1,260				540				2			131			
Average number sick daily	6.30				3.44				1.47							.35			
Average number sick daily per M	1.42				.78				.33							.07			
Average duration of treatment	6.74				7.32				6.58							5.03			

NAVAL HYGIENE.

TENNESSEE.

This vessel, flagship of the North Atlantic squadron, during the first quarter of 1880 lay at New York 7 days; in Hampton Roads, 11 days; at Norfolk, Va., 70 days, and was at sea 3 days. In the second quarter, 26 days were spent in the harbors of Norfolk and Hampton Roads, Va.; 8 at Aspinwall and 1 at Chiriqui, United States of Colombia; 28 at New York, and 28 at sea. During the third quarter 71 days were spent in ports of New York, Portland, Me., Boston, Newport, and Port Royal, and 21 at sea. During the fourth quarter 73 days were spent in New York, Hampton Roads, Va., and Barbadoes, West Indies, and 19 at sea. During the year the Tennessee was in port 295 days, and at sea 71 days.

POWHATAN.

During the first quarter, 1880, this vessel lay at New York 31 days; at Hampton Roads and Norfolk, Va., 58 days, and was at sea 2 days. In the second quarter she lay in same ports and at Annapolis, Md., 77 days, and was at sea 14 days. In the third quarter 64 days were spent in the ports of New York, Port Royal, S. C., Norfolk, Va., Santiago de Cuba, and Guantanamo, and 28 at sea. In the fourth quarter 86 days were spent at Newport, New London, New York, Norfolk, and Hampton Roads, and 6 at sea. During the year the Powhatan was in port, as above, 316 days, and at sea 50 days.

Surgeon A. S. Oberley makes the following remarks in his sanitary report:

The Powhatan is a single-decked, side-wheel steamer, 281 feet long over all, 45 feet breadth of beam, 26¼ feet depth of hold, drawing 19 feet of water, and registering 2,182 tons. She has a berth and orlop deck which can accommodate each of the crew with 110 cubic feet of air-space. They are warmed by steam radiators fore and aft, ventilated by hatches during cold, and by hatches and air-ports during warm weather, and are kept dry between decks, not having been saturated unnecessarily below with water for cleansing purposes.

For each officer (including mess and occupied staterooms) the cubic feet of air-space for the warrant officers is 309; for the steerage, 130, and for the wardroom, 716 respectively. The method of ventilation is the usual one, by air-ports and hatches, save in the wardroom aft, where a ventilator and after-windows give more than the usual facilities for the renewal of air.

During the quarter the average of carbonic acid per 1,000 volumes of midnight air on the berth deck, has been 1.242. Of sick, the daily average has been $9\frac{85}{92}$, and resulting from diseases incident to the climate and locality in which the ship was placed.

At Norfolk we had malarial and warm-weather diseases; while north, affections of the throat and bronchial tubes mostly prevailed—the latter not incapacitating for duty, and hence no admissions were made. Relative to the throat affections, they partook of a pharyngo-tonsillar character—some ulceration, much affection of the follicles, and in two instances marked cases of false membrane affecting the palate, tonsils, and nostrils, with much swelling and dyspnœa. As to the cause of the latter no satisfactory reason can be given. The affected persons had been on shore a few days previously, but as the cases were of the simple form of diphtheria, urine non-albuminous, the disease did not extend, and as it succeeded a gradation in diseases of the tonsils during prolonged cold and windy weather while at Newport, where first cases of simple tonsillitis appeared, then follicular tonsillitis more and more severe, and all subsiding on a favorable change in the weather, I incline to attribute the same exciting cause to all, and not to any special infection on board or ashore.

The rest of the diseases which appeared on board mostly belong to the class which *come through* imprudence and neglect, and need no special explanation.

VANDALIA.

This vessel was repairing at the New York navy-yard the entire first quarter and 58 days of the second quarter, 1880; the remainder of the latter quarter, except 4 days at sea and 4 days at Huntington, N. Y., was spent in ports along the New England coast. In the third quarter 41 days were passed at Saint John, N. B., 26 in ports along the New England coast, 23 at Norfolk and Hampton Roads, Va., and 32 days at sea. In the 4th quarter 88 days were spent in port at New York, Baltimore, and Hampton Roads, and 4 at sea. During the entire year 1880, the Vandalia lay in port 326 days, and was at sea 40 days.

MINNESOTA.

This vessel was employed as training ship, and during the entire first quarter, 1880, lay in the harbor of New London, Conn. During the second and third quarters she cruised along the New England coast, on Long Island Sound and the Hudson River, being 12 days at sea. In the fourth quarter, 51 days were spent at New York, 37 in Hampton Roads, and 4 at sea. During the entire year 1880, the Minnesota lay in port 350 days, and was at sea 16 days.

The following is the report of Surgeon E. Kershner in relation to the sanitary matters of the ship:

The Minnesota is a first-rate screw-frigate, intended to carry forty-six guns. Her tonnage is three thousand and displacement four thousand seven hundred, and she is one of the five first-class frigates belonging to the United States Navy. She is built entirely of wood and supplied only with auxiliary steam power, and is about twenty-five years old. She was last put in commission in 1875, and has been in constant use since that time, without having her crew removed for repairing and cleaning the ship. Her officers and crew number generally about five hundred and eighty. They are accommodated in the following-named apartments, the average air-space of which is about as follows, viz:

	Cubic feet.
Commanding officer	20,160
Wardroom	1,194
Steerage	80
Port warrant officers	532
Starboard warrant officers	500
Berth deck	197
Sick-bay	315
Gun deck	210

In this estimate, servants are not included in the apartments of the officers, although their presence makes an essential increase in the amount of impurity contained in the air. The berth deck is most overcrowded, and at the same time has the poorest ventilation, so that the persons sleeping there must necessarily suffer very much for the want of pure, healthy air. Indeed, there is an almost sickening odor prevailing there at night, after the men have gone to their hammocks. The air of the gun deck is little better, although there the men have a little more air-space of about thirteen feet, but the natural leakage of air about the hatches and gun-ports enforce a better condition of atmosphere.

The estimate for the sick-bay is based on the daily average of sick for the first quarter. It ranks third on the list of overcrowded departments; but that fact, and the comparatively large air-space per man as shown above, fails entirely to give any idea of the unhealthy and impure condition of the air in the place chosen to restore health and strength to those unfortunate enough to be compelled to yield to the debilitating influence of ship-life. There is very little chance for change of air here, as there are only ten air-ports, each 6¼ inches in diameter, and one small hatch above, which admits an exchange of one impure air for another, especially at night. The absence of anything like ventilation in the sick-bay, as well as the absence of light, has had a most injurious effect upon patients who have been confined to the sick-bay, and has tended to prevent rapid recovery from diseases slight in themselves, and which, under more favorable conditions of light and air, would have made quick advances

health. The attendants have also suffered very much from the close, impure air, and the health of all of them has gradually deteriorated.

The general plan of ventilation adopted in the Minnesota, or rather absence of plan, is the same as that in all ships in the Navy up to a very recent period. The hatches, air-ports, and openings into the state-rooms, berth and gun-deck rooms, over the knees, were intended to give all the ventilation required; but, as in many other ships, it only serves to conduct foul air and sickening odors into all parts of the ship, some of which would, perhaps, without that system, have been comparatively comfortable and healthy. The forward part of the wardroom has several hatches opening through the gun-deck, and this part would be quite pleasant if it were not for the fact that the gun-deck air is generally as impure as that in the wardroom. The after part of the wardroom has no ventilation except that obtained through four air-ports six and one-half inches in diameter, by which the air impurities are increased by being forced up through one hatch, from the cockpit and after-hold, and through another from the extreme after end of the shaft-alley. Through these two hatches the wardroom is supplied with gases from the decomposition of a variety of articles in the hold, and from the fire and engine room, as well as from the bilge of the ship.

During the last year many officers have suffered very much from neuralgic pains, rheumatism, catarrh, and general malarial debility, which I believe to be largely due to the impure air which has been circulating in drafts and currents through the wardroom, exposure to which is unavoidable while in that compartment. The ventilation of its after portion would be much improved, at a very slight expense, by making connection with the outer air by a shaft three or four feet square from the extreme end of the wardroom to the poop-deck. This was done in the United States steamer Swatara, making a very good ventilation of the wardroom and carrying off all the foul air from its after part and the pantry.

The ventilation of the sick-bay could be much improved by opening a small hatch in the spar-deck directly over the one in the gun-deck. This would also give much more light in the sick-bay.

Long since I gave up all idea of ever seeing even moderately good ventilation on board our ship except by mechanical means. But much can be done by vigilant care and attention, on the part of officers in charge of ships, in this direction. In warm weather the Minnesota has been ventilated by five wind-sails, which, of course, did no good when most needed. In cold weather there was absolutely no ventilation, as all ports, doors, and hatches were almost constantly closed to keep the heat in. All the air, therefore, that entered from the outside, came through cracks and crevices about the gun-ports and occasional opening of the hatch-house doors by persons passing in and out. Under these conditions the officers and crew were living most of the time, especially at night, in what may practically be considered a closed box, with no change of air, but breathing and rebreathing air loaded with impure exhalations from hundreds of human beings. So remarkably impure has the air been at times, that on first entering the ship, the foul air has been almost overpowering and sickening. Of course this could be easily remedied by admitting air in various places in small quantities, or having larger openings well protected, so that drafts of wind directly upon the men would be avoided. This could be easily arranged without expense on board ship. As in all wooden ships heretofore built for the Navy, the bilge is ventilated into the sleeping-place of the men and into the state-rooms of the officers through openings above the knees and through openings covered by perforated iron in the sides of the ship, a foot or more above the berth-deck. Some of these openings have been closed in the state-rooms by the officers to prevent poisoning from the foul air. In all parts of the ship there are many rotten timbers, as she has not been repaired for many years. The humidity of the air arising from daily wetting the decks accelerates the process of decay in the wood, and this again I believe to be a powerful element in the production of sickness among the crew. The list of sick has been a very large one during the year, showing very many cases of severe disease, and plainly pointing to a very bad hygienic condition on board the ship.

In the latter part of December, 1879, the Minnesota moved from New York to New London, Conn., with a view to using the New London naval station as a training station. This station is located about five miles above New London, communication being by a steam-tug. The vessel was therefore placed alongside the wharf, with the understanding that she was to permanently remain there. The boys were permitted to go on the wharf at almost all hours, and had further liberty to play and exercise on part of the land belonging to the station. Part of one of the buildings of the station was used by the ship. This relief from confinement to the ship exerted a very healthful influence upon the boys, and without it there must have been much more sickness among the crew. The situation of this station is a very cold one, lying as it does against the hill, facing the west bank of the Thames River. These hills shut out the afternoon sun, while it is exposed to the sweeping cold north winds of the winter, which appear to concentrate between the high banks and rush down the river at all times. These cold winds I consider a fruitful source of diseases

of the respiratory organs and of rheumatism, which prevailed on board the Minnesota. While at this station the sick-list was very large, and there was no accommodation except such as could be extemporized by using the cabin of the United States ship Florida moored near the Minnesota alongside the wharf. This cabin contained about six thousand cubic feet of air-space, but necessity compelled us to lodge as many as fourteen patients in it, as it was thought much better to crowd them in there than retain them in the sick-bay of the Minnesota, which is extremely deficient in light and air.

Notwithstanding these primitive hospital arrangements, a large number of patients, prostrated with very serious diseases, were successfully treated, as may be noticed in the report of sick for the first quarter of this year. A great effort was made to secure the stable or part of one of the large buildings of the station for hospital purposes, but no part of them could be spared for such uses. The sick-rate ruled very high for the first quarter, being an average of twenty-five patients on the journal, besides many who were not on the list, who took medicine for catarrh, bronchitis, and like diseases, but who were able to do duty.

At the time of our arrival in New London, December 20, 1879, a few cases of small-pox had occurred there and some were then under treatment. Isolated cases of scarlet fever also existed in the town. The small-pox gradually spread until cases were to be found in several parts of the town, and after mature consideration it was thought advisable to recommend that the crew be restricted from visiting it. This was done on January 24, 1880. The commanding officer adopted the recommendation and ordered the crew to be quarantined, but after February 4 the men were permitted to visit the town. On March 5 one of the men was discovered to have small-pox and was removed to the small-pox hospital the next day. The sick-bay was at once disinfected, the whole crew vaccinated, and no more cases appeared. But some weeks later, the scarlet fever becoming epidemic in New London, non-intercourse with the town was recommended, and established March 20. On April 3 this restriction was removed by the commanding officer, and about a week after one of the boys was prostrated with the disease. He was placed in the cabin of the Florida, after removing all the other patients from it, and when convalescent was permitted to go on leave. This boy, returning to the ship at the expiration of his leave, was some days after transferred with many others to the United States ship Constitution at New York. Scarlet fever soon after broke out on the Constitution and she was sent to quarantine in the lower bay. It also appeared among the children in the navy-yard, in all probability infection having been communicated from the single case brought to the navy-yard by the Minnesota.

Water.—On the arrival of the Minnesota at New London the city water, which is supplied from Lake Konomoc, was used. It was believed to be very impure, as it sometimes yielded considerable dirty-looking deposit, and had a very offensive smell, the latter to such a degree as to render it almost unfit for washing purposes. Analysis of this water failed to give a reason for the unpleasant odor. The following analysis was made by Professor Nichols, of Boston, the Lake Konomoc water being compared with that of Springfield, Mass.:

Date.	Locality.	Ammonia.	Albuminoid ammonia.	Inorganic.	Organic and volatile.	Total at 212° Fahrenheit.
Dec. 23, 1879.....	Lake Konomoc, near bottom, at a depth of 25 feet.	0.005	0.016	1.60	1.20	2.80
Dec. 23, 1879.....	Lake Konomoc, at outlet.....	.....	.....	.....	.....	3.00
Dec. 11, 1879.....	Commissioner's office.....	0.006	0.008	.....	.....	3.88
July to Dec., 1876	Springfield, Mass., average of 45 samples.....	.....	.....	2.09	2.86	4.95
Jan. to Sept., 1877	Springfield, Mass., average of 32 samples.....	.....	.....	2.09	2.69	4.76

The question of a water-supply for the ship was soon solved, however, on discovering that a well on the premises would yield an inexhaustible supply of very pure and excellent water, all our water thereafter coming from this well.

After our arrival at Fortress Monroe the crew suffered very much from diarrhœa and other bowel affections, caused, I believe, by the impure water furnished from Norfolk. The same trouble was experienced there during our visit in 1879, and although the swamp water has a reputation for healthfulness, I feel sure that much disease was caused on board the Minnesota by this water.

The ship returned to New York, November 15, arriving at the Brooklyn navy-yard wharf, where she was made fast, November 17, and where she now lies. This location is a very unhealthy one, owing to the large sewer, which drains a large part of the city, emptying into the Wallabout Bay near the ship. This sewer fills the air, as well as the water, with impurities of a very dangerous nature, and during the winter its effects have been felt on board the ship by a tendency to malarial diseases. This

would probably have been much worse had it not been for the low temperature which prevailed, covering the greater part of the bay with ice.

The severe weather of the latter part of the year would naturally be promotive of health on account of the bracing air, and destruction of disease germs by cold, but we had much sickness on board, partly caused by keeping the ship closed up to keep it warm, thus almost entirely excluding the pure, fresh air, and heating the impure air within to a high temperature. The building of a house over the forecastle in December, including in it the ship's head, was a measure well calculated to multiply and intensify the air-poisons pervading the ship. The impure and stench-laden air from the head freely circulated in this house, and from it into the men's sleeping places on the gun and berth decks below. Such a contrivance as this can only result in disaster to the health of the boys.

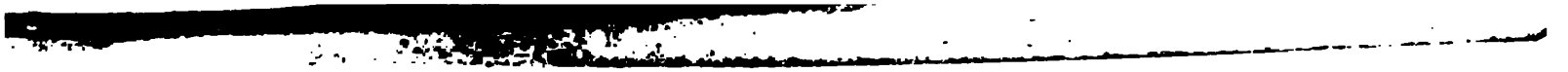
The injurious influence of damp air arising from wet decks on the health of a ship's company has been often and ably set forth by medical officers of the Navy. I will only state that this ship has suffered the usual amount of wetting, sometimes a single day not having elapsed in a month when the berth-deck has not been wet. The health of the ship's company has suffered very much during the year from dampness and wet decks, the decks retaining moisture from one washing to another. The washing is done by regular routine without regard to the state of the weather. This should be prevented by order from the Department, and the decks should not be washed when the saturation of the air is above a certain point to be named by order. The present loose and careless mode of perpetually wetting down arose in time past when the effects of humidity upon health were not so well understood as at the present time, and when instruments of precision were not in use. All ships being now supplied with meteorological instruments, I would recommend that a limit should be officially given when washing down should not be done, except in cases of great emergency.

Lighting.—In the daytime, if the sun is shining, a good light is obtained on board this ship on the gun-deck and above it. Below the gun-deck it is always gloomy and dark. When cloudy and rainy special lamps have to be used in the wardroom, steerages, and sick-bay, and this is a very serious obstruction to comfort and health. At night the ship is poorly lighted by lamps which throw a dull glimmer, producing a very injurious effect upon the health of the ship's company by removing from the air for combustion a large quantity of oxygen, and at the same time giving out further impurities, the products of combustion. In view of these serious defects, I would respectfully urge the propriety of adopting the electric light, which is now nearly perfected, for all our ships. The electricity could be generated in the engine-room and lights placed in any or all parts of the ship. In addition to the superior qualities of this light for ship purposes, the danger from fire avoided by its use should alone induce its adoption. From estimates given by a company in New York, I learned that it could be introduced and light furnished for a year for less than the cost of the oil now used in the same length of time. The introduction of this light upon navy ships, which must occur at an early date, will be a change most welcome to all who have to live on shipboard.

Clothing.—The clothing has been supplied from the establishment for its manufacture in the navy-yard at New York. The quality has been very good, and great improvement has been made over the old style by having it made in sizes to suit the boys. The "overall," now supplied by the Bureau of Provisions and Clothing, is most useful and comes at small cost, so that the sailor can afford to frequently renew them, and thus present a clean appearance and at the same time prevent the wear of the expensive cloth and flannel clothing. I would respectfully recommend the introduction of a light water-proof hat or cap of some kind which would protect the eyes and neck of the sailors, the present cap being very hot, heavy, and not affording much protection to the eyes or back of the neck in bad weather. I would also suggest the introduction of "arctic" overshoes or boots for winter wear when on shore, or washing decks in cold weather. This would save the men from either wading in cold water in their bare feet, or from getting their shoes and stockings saturated and having wet feet through the day. In my opinion the effect upon health of washing in bare feet, or in shoes and stockings, is about the same, being equally dangerous to health.

I would urgently recommend that every boy be supplied with his outfit of clothing by the government, and avoid his being loaded with a heavy and disheartening burden of debt at the beginning of his career—a burden he is often unable to remove until he is a year or more in the service.

In concluding this report I beg to respectfully say that, in my opinion, based upon about two years' experience on board the Minnesota, a ship such as this, or a hulk, is not a suitable place to carry on the training of boys, owing to our inability to even approach to a healthy ventilation, and owing to the fact that old, rotting timbers send out a continual stream of disease germs, a process which no effort of officers or men can arrest. When is added to these destructive influences the danger of overcrowding, and the susceptibility of boys of tender age to succumb to these surroundings, it will



be perceived how extremely unfit for this purpose an old wooden ship becomes. Barracks, erected somewhat on the plan of modern pavilion hospitals, would be much better suited to the wants of the service, and would well conserve the health of the boys. They could be kept clean, dry, and well ventilated. The cooking could be much better done, and such arrangements could not be otherwise than beneficial; promoting the healthy physical development of the boys and exerting a marked favorable effect upon their spirits, character, and growth, to say nothing of the greater readiness with which education is received and assimilated by a mind fresh and healthy than it ever can be by one stupefied by foul air, bilge gas, and watery vapors loaded with disease germs. The boys could sleep and mess in the barracks, and during the day go on board the ship to exercise with the guns, sails, masts, &c., or for instruction in the duties of a sailor. This plan meets with the approval of nearly every officer who has experience on training ships, and is favored by those in the English navy best competent to judge.

CONSTITUTION.

This vessel was employed as a training ship, and during the first quarter, lay 8 days at Port de France, Martinique; 15 at Santa Cruz; 23 at Aspinwall, and was at sea 45 days. In the second quarter, she lay 86 days at New York, Hampton Roads, and Norfolk, and was 5 days at sea. In the third quarter, 64 days were spent at Halifax, various points along the New England coast, and at Yorktown, Va., and was 28 at sea. In the fourth quarter, 40 days were spent at Hampton Roads and Yorktown, Va., 32 in the navy-yard, League Island, Pa., and 20 at sea. During the year 1880 the Constitution was in port 267 days, and at sea 99 days.

The following is the sanitary report of Surgeon F. M. Dearborn:

The first three months of the year were spent in the West Indies, at the islands of Martinique and Santa Cruz, at Aspinwall and at sea. The three ports visited were quite healthy during our stay, but the ship's company, consisting principally of recently-enlisted apprentice boys, was much debilitated by climatic influences, and our return to a northern port early in April came none too soon for the sanitary condition of the vessel.

A mild epidemic of pertussis, 65 cases, occurred during the passage north from Aspinwall, the disease appearing in many instances in those who had previously suffered from the malady.

With an average ship's company of 370, the large number of 1,984 sick-days occurred during the quarter.

The second quarter of the year was spent at Hampton Roads, Norfolk and New York, and with an average ship's company of 290, the sick days numbered 917. This better result was largely due to the application, upon my reccommendation, of shellac to the berth-decks and the consequent dryness of that ill-ventilated portion of the vessel. The results more than met my expectations, in the reduction in the number of cases of tonsillitis, bronchitis, and rheumatism. It is greatly to be desired that by general regulations all decks of men-of-war, below the water-line, should be kept covered with shellac, and I know of no one measure which would do so much to reduce the sick-lists, and add to the general health and comfort of naval vessels.

While the ship was at New York, May 23, 1880, a case of scarlatina appeared, and the promptest measures were employed to remove the patient from the ship to the New York Naval Hospital. On the 29th two more cases occurred, and on the 30th a fourth and last one. On each occasion the patients were removed, with the utmost promptness, and every measure taken to prevent the spread of the disease. They were all apprentice boys received together from the Minnesota on May 21, two days before the appearance of the first case on the Constitution, and a case of scarlatina was at that time in the New York Naval Hospital, received directly from the Minnesota. On June 7, eight days after the appearance of the last case, by order of the department, the Constitution was towed to the upper quarantine ground, New York Harbor, and remained there seven days. Fortunately, due to the quickness with which the four cases had been removed from the ship, no new ones appeared. If others had occurred at quarantine it would not have been possible to place them under such favorable hospital conditions there as were afforded by our own Naval Hospital.

The third quarter was spent along the eastern coast between New York and Halifax, and the health of the vessel was all that could be desired, there being but 575 sick-days, with an average ship's company of 350.

The commencement of the fourth quarter found us at Yorktown, Va., where,

although the vessel remained but few days, malarial influences were so intense as to materially affect adversely the health of the ship at that time and since.

The month of December was spent at this navy-yard, where the vessel has come in need of extensive repairs, the timbers and planking above the water-line being very extensively decayed, while innumerable small leaks in decks and planking keep constantly moist this mass of rotting vegetable matter. The ventilation of the ship, at the same time, is very defective. The average ship's company during the last quarter was 226, and the total number of sick-days, 1,132. The physique of the apprentice boys has not been so good as could be desired, and, of a total number of 406, no less than 46 have been sent to the hospi al—in 11 cases for causes existing prior to enlistment, which unfitted them for usefulness in the naval service.

During five months of 1879 twenty such cases were found on board the vessel. In the past year 20 apprentice recruits have been accepted out of 70 physical examinations. But a single death has occurred during that time on board this vessel, and only one serious accident.

PORTSMOUTH.

This vessel, used as a training ship, spent the entire first quarter at the Washington navy-yard. In the second quarter she lay 19 days at Alexandria, Norfolk, and Hampton Roads, Va.; 6 at Hamilton and St. George, Bermuda; 5 at Fayal, and was at sea 61 days. In the third quarter, 14 days were spent at Halifax, 52 at ports along the New England coast, and at New York, and she was 26 days at sea. In the fourth quarter 7 days were spent at New York, 37 at Hampton Roads, 41 at Washington, and 7 at sea. During the year the Portsmouth was in port 272 days and was at sea 94 days.

In his report to the bureau, Surgeon R. A. Marmion makes the following notes:

As far as I can ascertain, a report of the number and distribution of the crew of this ship, since it has become a training ship, has not been made to the bureau. I therefore present these details as a preface to my hygienic report for 1880. The complement of the ship follows:

Commissioned officers	13
Midshipmen (4) and warrant officers (4)	8
Petty officers, seamen, &c	98
Marines	29
Apprentices	150
Total	295

These are quartered as follows, it being borne in mind that the figures referring to cubic air-space represent the net after applying corrections for battery and equipments in general:

	Cubic feet.	Occupants.	Cubic air-space per man.
			Feet.
Gun-deck proper	21,080.11	188 enlisted men	172+
Gun-deck, two state-rooms	1,139	2 officers	569
Gun-deck, cabin	3,500	1 commanding officer	3,500

	Cubic feet
Berth-deck proper contains	12,593
Sick-bay	1,784
	14,377

This space is allotted to 87 enlisted men who have, consequently, 165 cubic feet per man.

The steerage territory, embracing the steerage country, six state-rooms, two mess-rooms, paymaster's office, and armory, contains 4,230 cubic feet, and is occupied by two commissioned officers, four midshipmen, and four warrant officers, who have each

: feet of air-space. The remainder of the berth-deck, being its after por- ıt off by bulkheads and contains 3,261 cubic feet. This is the wardroom and embraces the mess-room and state-rooms for eight officers, each of whom t 445 cubic feet of air-space.

ıge of sickness.—There are no vessels in commission for cruising whose crews in numbers as much as do those of the training ships, owing to the fact that s the apprentices are available for transfer to regular cruising vessels, they sposed of, and the ship's company may be suddenly reduced one-half and ed at that for several weeks. In this way the mean strength of this ship's during 1880, as shown by the quarterly returns, is reduced to 234. There itted for treatment 220 cases, or 94 per cent., and two deaths occurred, a mor- 85 per cent. The total number of sick-days during the year was 1,923, rep- a daily average of 5.25 persons on the sick-list, or 2.25 per cent. of the mean of the crew, as given above.

.—On the gun-deck this is effected by three hatches and one skylight, of a of 184 square feet, and by twenty gun-ports, or, when these ports are closed, ılar glass 6 inches in diameter, in each upper half-port. The berth-deck is y the hatches mentioned above, by eight circular air-ports 7 inches in diam- indirectly by six additional air-ports, of which two are in the sick-bay and ınder in mess-rooms, &c. The wardroom country is lighted in its forward ne skylight 4 feet 6 inches by 3 feet, and aft by a small skylight 2 feet 4 2 feet 6 inches. In addition, each state-room has a circular air-port 7 inches ter. The wardroom country is rather dark, and can only be improved by ports, larger than those it now has. Last winter, when the berth-deck was plied throughout with new air-ports, I urged the propriety of using the quare ones. I regret to say this was not done, but circular ones were put in, ough an improvement on their predecessors, do not give all the light or air e with square ports.

Non.—In good weather, or such as will admit of keeping open the gun-ports nes, the ventilation of the gun-deck is all that could be desired, as will be referring to the number of hatches and ports given under the head of lighting. se hatches extend from the spar-deck to the berth-deck, and in addition to deck is ventilated in the wardroom by a hatch 4 feet 6 inches by 3 feet, f the mizzen-mast, communicating with the gun-deck, and a small hatch a ft of the mizzen-mast, 2 feet 4 inches by 2 feet 6 inches, which extends, with- pening on the gun-deck, to the quarter-deck.

reme forward part of the berth-deck, occupied as a sick-bay, and the after ne wardroom or pantry, are very poorly ventilated, and must, as at present depend almost entirely upon artificial illumination. Both of these defects medied to a great extent by small skylights or hatches, about 18 inches tending as continuous tubes to the spar-deck. I respectfully urge the im- of an improvement in this direction, since it can be made at a comparatively ense.

g.—This ship is warmed entirely by stoves. In my last report on this sub- ited your attention to the question of steam heat and a distilling apparatus. has tanks for 20,000 gallons of water; some of this space could readily be r a heating and distilling apparatus. At present, we must depend entirely from shore.

Under this head I have nothing to report. The ship has an excellent galley, od is well cooked. Fresh provisions are given the crew very liberally.

SARATOGA.

vessel, one of the training ships for apprentices, was 77 days ington during the first quarter, at Hampton Roads 40 days, ea 7 days. In the second quarter she lay at Hampton Roads 10 ew York, 8; Lisbon, Portugal, 9; Cadiz, Spain, 6; Gibraltar, 7; les, Italy, 6; and was at sea 43 days. In the third quarter 4 re spent at Spezzia and Genoa, Italy; 16 at Villefranche; 4 at r; 3 at Tangiers, Africa, and 2 at Funchal, Madeira; and 61 at the fourth quarter 46 days were spent at Hampton Roads; 37 at re, and 9 at sea. During the year the Saratoga was 232 days and 122 days at sea.

llowing sanitary remarks are extracted from the report of Passed st Surgeon H. E. Ames:

atoga is one of the old sloops of-war, repaired four years ago, and fitted for pprentice boys. A light spar-deck was added, giving additional berthing

facilities and the comfort of a gun-deck. She is built of live-oak, and still sound and serviceable; with some alterations and repairs, she can be made healthier and better suited for her present use. Her full complement of officers, men and apprentices is 291, disposed as follows, in regard to berthing, excluding officers.

Gun-deck	180
Berth-deck	85
Total	274

The officers are placed:

Cabin	1
Wardroom	8
Steerage	1
Wardroom officers' rooms on gun-deck	1
Warrant officers' rooms on berth-deck	4
Total	16

The available air, after carefully excluding the space occupied by the movable articles in the different habitable parts of the ship, is:

Wardroom country	5,880
Cabin, ample air-space; not estimated.	
Average air-space in officers' state-rooms	225
Average air-space in warrant officers' state-rooms	220
Average air-space in steerage	500
Average air-space per man in gun-deck, all hands below	184
Average air-space per man in berth-deck, all hands below	134

The ship is ventilated through the hatches, gun and berth-deck air-ports. These cannot be utilized except in summer, under the most favorable circumstances, when the ship is at anchor and no sea running. When at sea, in good weather, the hatches and upper half of the gun-ports can be used; in heavy weather the hatches only can be relied upon, and then only during clear weather; rain necessitates the use of hatch-hoods, thus cutting off our only means of ventilation. The area of the hatch opening from the spar to gun-decks, not taking into consideration the reduction caused by the necessary ladders and gratings, is 168 square feet; this is divided into fore, main, wardroom, and cabin-hatches, which would be sufficient for ventilation were they placed in a different manner, or when the gun-deck ports are open, but as they run fore and aft in the mid-line of the ship they are quite deficient when the gun-ports are closed. The area ventilated by them includes a radius of but very few feet from the hatch, leaving the air at the sides of the deck in a passive and impure condition. The gun-deck is ventilated by three hatches passing from the gun to the berth-deck; their area, with no allowances for ladders and gratings, is but 83 square feet, quite insufficient even under the most favorable circumstances. The wardroom country is ventilated by a hatch and by air ports in the state-rooms. When the ports are closed there is absolutely no movement of the air, and the rooms become cages for the retention of foul air. The two air-ports in the after part of the wardroom, opening directly astern, can be opened at sea only in fair weather. The wind-sails are constantly used, but unfortunately they are inadequate and choked most of the time from their tortuous route to the berth-deck; as with the hatch, the area ventilated is very limited. The cabin-ladder prevents full effect of the after hatch from its faulty construction, being perfectly tight in the back, so that it obstructs the air; a lattice-work back would add to the efficiency of the hatch in allowing the air to pass down.

The following sanitary suggestions are offered: On each side of the ship, on both gun and berth decks, to place a series of ventilators, alternately, beginning at the ceiling and near the deck, passing close to the ship's side inboard, up through the gun and spar decks and opening outboard, just at the bottom of the hammock netting. These ventilators can be made of thin galvanized-iron, with a sliding door on the outboard end that could be closed in case of a very heavy gale; the inboard end always remaining open to prevent accumulation of dirt and clogging of the tube. This probably can be done without weakening the ship or causing any objection either in appearance or the working of the vessel, and while it will not perfect it will greatly improve the ventilation of the ship. The after part of the wardroom is a *cul-de-sac* for the accumulation of heavy air and foul odors. This can be remedied by placing a ventilating-pipe with branched ends well aft, and allowing it to pass through the cabin, opening on the spar-deck and supplied with an automatic aspirating cowl. I would further urge that a square ventilator be placed abaft the mizzen, between the mast and cabin bulkhead, leading from the wardroom to the spar-deck. The officers' water-closets should be ventilated by cutting air-ports through the side of the ship or by means of a small aspirating ventilator leading up on to the spar-deck.

The present method of heating the ship is deficient; five stoves of small capacity are placed, one in the cabin, one in the wardroom, one on berth-deck, and two on the gun-deck. This defect can be readily remedied by using steam for heating purposes,

the steam at the same time performing an important use in distilling water. The water-supply is carried in tanks and its quality is very uncertain, for, in many cases, it must be accepted from the fact that it is the only water to be had. The use of distilled water would prevent many troubles that are now traceable to the drinking-water. Condensed water would banish this source of trouble, and this change would give us a great amount of needed extra room. Another great objection to the water-tanks is that they cover the bilges, rendering them inaccessible, and their cleanliness often a matter of conjecture.

A commendable feature of the ship is the absence of a sick-bay; it is found that patients are made more comfortable by swinging them, as occasion requires, in an improvised sick-bay screened by canvas, and avoiding the noise and ill-ventilation of the part of a ship in which the sick-bay is generally located.

A medical storeroom is needed, the stores and spare medicines now being carried in packing-boxes and stowed in the hold, necessitating a frequent breaking out of the hold and causing great delay and trouble.

KEARSARGE.

During the first quarter, this vessel was in Central America, in port, at Belize, British Honduras, Havana, Cuba, Almeirante Bay, and Boca del Toro, United States of Colombia, 78 days, and at sea 13 days. In the second quarter she was at Boca del Toro; Key West, Fla.; Hampton Roads, Va.; and Boston, Mass., 77 days, and 14 days at sea. In the third quarter 87½ days were passed in the ports of Boston, Portland, Norfolk, and Hampton Roads, and 4½ at sea. In the fourth quarter, 70 days were spent at Hampton Roads and Norfolk, Va.; Baltimore, Md.; St. Thomas and Curaçoa, West Indies; Bridgetown, Barbadoes; Cumana and La Guayra, Venezuela; and 22 at sea. During the year the Kearsarge was in port 313 days, and 53 days at sea.

Passed Assistant Surgeon C. U. Gravatt presents the following report:

The complement of the Kearsarge is 207. The average number actually on board during the year has been about 200. This estimate includes officers and apprentices.

Air-space and ventilation.—Although these subjects have been reported upon heretofore, yet certain considerations induce me to revert to them at this time.

Wardroom.—In the country there are 2,706 cubic feet, the state-rooms averaging 226 feet, and the ventilation is imperfect. A fair opportunity for ingress of air is offered, but there are insufficient means of renewal, it being dependent upon indirect aspiration through the steerage into the engine-room, and a small ventilator aft. This does good work in accordance with its size. The atmosphere often becomes very stuffy and offensive, particularly aft where the pantry is situated, the odors of which it is quite impossible to destroy with the present insufficient supply of fresh air. Officers occupying the adjacent rooms complain considerably from this cause. Another source of complaint is that space has been left between the knees and planking for the stated purpose of airing the timbers, but which communicates directly with the bilge. In view of the repeated and urgent objections that have been raised against this habit, it seems strange that it should be persistently continued. Ventilation of ships' timbers is a matter of unquestionable importance to constructors; personal sanitation, however, is much too apt to escape attention.

Steerage.—The two steerages combined contain 1,346 cubic feet, and the country 1,450 feet, thus aggregating 2,796 feet. Accommodations are provided for eight persons—an allowance of 347 feet of air-space to each. Since August, however, the number of occupants has been increased to 13, thereby reducing the individual air-space to 214 feet. This overcrowding, with its consequent inconveniences and possible disaster in case of subjection to unfavorable climatic conditions, was represented to the commanding officer before leaving the United States, with a recommendation for reduction to the proper number. Though approved by him, the ship was permitted to make a West India cruise without change. The hatch aperture equals 15 square feet, and that of the air-ports 1.2 feet. The main source of ventilation is the aspirating effect of the engine-room, with which there is communication by a doorway, and through which a current moving at the rate of 280 feet per minute has been detected when under steam; 151,200 feet would thus be abstracted hourly, the area of the door being 9 square feet. Currents are also established when not under steam, but, of course, they are then comparatively feeble. This principle of aspiration has been further utilized by cutting a window through the steerage pantry with very satisfactory result.

Berth-deck.—The whole amount of available air-space after deducting solid impediments is 9,946 feet—nearly 1,000 feet less than heretofore reported. It may be there

are more obstructions at this time, or some may have escaped the observation of former calculators. The above amount divided among 115 men billeted on the deck, and allowing 7 feet per man for himself and bedding, gives but 79.5 cubic feet to each. Until the past summer a mess-room and state-rooms for 4 warrant officers took up 1,435 feet. They were then removed upon recommendation and the space allotted to the crew.

The total aperture is 55.9 square feet, of which 50.5 feet is by hatches, 3.6 feet by air-ports, 7½ inches in diameter, and the remaining 1.8 feet by a ventilator aft. In a former communication I endeavored to draw attention to the usual overrating of hatches in estimating the ventilation of ships. Without means to direct currents through them they assist only in the most passive way by diffusion consequent upon difference of temperature. This is capable of easy demonstration by the aid of an anemometer, and so true is it when applied to this ship, that ordinarily the 3.6 feet air-port aperture, supplemented by the 1.8 feet of the ventilator, is more potent than the 50.5 feet hatch area. Their greatest utility in ventilation lies in the accommodation of wind-sails. To supply the 115 occupants of this deck with the 2,000 feet per hour as ordinarily required, would necessitate 23 changes, and to accomplish this a constant and reliable draught through nearly half of the total aperture of 160 feet per minute. This will at once be given up as impracticable, both because such a draught could not be had, and because, as already pointed out, no reliance can be placed on the hatches. It is therefore reduced to a question of furnishing as near the needed amount as possible through the side ports and wind-sails. Granting this area of aperture to equal 5 feet, a current moving at a velocity of even 32 miles an hour would only supply 90,000 feet. These few figures are sufficient to show the present inefficiency and the pressing need of ventilation. This is further attested by the chemical examination of the air.

Water.—Until a few months since the tank capacity amounted only to 2,300 gallons, which, with an expenditure of 300 gallons daily, necessitated distillation every fifth or sixth day. The inadequacy was represented and the capacity increased to about 4,000 gallons. A squadron general order requires condensed water to be used except at home ports; but at ports whose water is demonstrated to be good there can be no good reason for prohibiting its employment, and thereby save the trouble, inconvenience, and expense attendant upon frequent distillation, especially if no donkey-boiler be provided. This may easily be done by furnishing all medical officers with apparatus for submitting a sample of water to a proper chemical examination, which can be completed in about an hour. This would embrace a determination of hardness, alkalinity, amount of chlorine, free and albuminoid ammonia, total oxidizable matter, organic oxidizable matter, nitrites, and nitrates. A sound and intelligent opinion upon its quality could then be given. The hasty and cursory examination heretofore required is too absurd for continuance. At Saint Thomas, for instance, a sample of water was taken as it is ordinarily delivered to shipping, with the following analytical results:

Chlorine	grs. per gal..	1.24
Alkaline carbonates	do....	3.00
Total hardness		2°.1
Ammonia, free		Traces.
Ammonia, album	pts. per mill..	.07

Microscopic appearances: scattering algæ, stomata of leaves and other vegetable fragments, bacterium temno, and vibriones in small numbers. Opinion: not injurious, rain-water stored in cisterns, which accounts for the microscopic objects. Well-water at the same port would have been rejected on account of its large proportion of sodium chloride—55 grains per gallon—though good in other respects. Again, at Curaçoa the water is, by common report, good. A specimen of cistern and well-water examined, gave the following:

	Chlorine, grs. per gallon.	Alkaline carbonate, grs. per gallon.	Total hardness, Clarke.	Total oxidizable matters, grs. per gallon.	Oxidizable organic matter, grs. per gallon.	Nitrites, grs. per gallon.	Parts per million. Ammonia, free.	Parts per million. Ammonia, albuminoid.
Well	14.6	8.5	6.3	2.6	1.3	1.3	Trace.	.22
Cistern	3.7	9.0	3.5	12.6	11.8	.8	.248	.292

A decided sediment was given in each case, which, in that of the cistern-water, was rich in animal life, desmids, nematodes, bacteria, and vibriones in great abundance, together with ova-scales, hairs, and algæ-confervæ, &c., among which the exceedingly active animalcules harbored themselves. In the well-water there there were many minute algæ, a few desmids, no nematodes, some bacteria and vibriones, much less active than in the other sample. Both of the above waters would have met with prompt condemnation. The contamination of the cistern-water is from neglect in cleaning. Rain being the source of supply, with even ordinary attention, it should have been kept perfectly pure, there being no trees to deposit their leaves on the roof. The large proportion of chlorine in the well-water is principally in combination with sodium. It is a hard water, besides containing too much organic impurity to be healthful.

Water supplied to the British dock-yard at Port Royal, Jamaica, yields—

Chlorine, grains per gallon	10.66
Total hardness, Clark's scale	9°.5
Alkalinity, grains per gallon	15
Total oxidizable matter, grains per gallon	.72
Organic oxidizable matter, grains per gallon	.40
Nitrites, grains per gallon	.32
Specific gravity	.1000
Pts. per million:	
Ammonia, free	.0
Ammonia, albuminoid	.03

It is hard from calcium, carbonate, and magnesia. The chlorine, though abundant, may be considered as is shown by the subsequent figures, as sodium chloride, 17.5 to the gallon. The water is remarkably free from organic matter. Its source is a spring situated near the base of a mountain about six miles distant. The English vessels and people of Port Royal use it, but it occasioned an outbreak of mild diarrhœa in the crew of this vessel.

It is gratifying to be able to report most favorably upon the physical character of the crew of this vessel. It is composed almost entirely of young, active men, as may be seen from the table of age and weight given below, and they are peculiarly free of syphilitic or other constitutional taint. The good results are seen in their contentment and power of endurance under unusual exercise.

Average age	years.	29.8
Average weight	pounds.	149.6
Average height	inches.	66.94

Concerning the apprentice boys, the following statistics have been taken:

Average age	years.	19.2
Average weight	pounds.	142.4
Average height when enlisted	inches.	64.49
Average height at present time	do...	65.45
Average gain	do...	.96
Average length of service	years.	2.6

CONSTELLATION.

This vessel was in commission during 193 days of the year, in the first two quarters of which she was completing her special cruise to Ireland. After her return to the United States, about the middle of June, she was employed as a practice ship for the midsummer cruise of the midshipmen. During the latter service she cruised along the coast as far as Portland, Me., spending 33 days in the ports of New York, Annapolis, and Portland, and 30 days at sea. During the year she was at sea 91 days, and in port 82 days. In his sanitary report of the practice cruise, Passed Assistant Surgeon C. U. Gravatt remarks:

The total air-space of the berth-deck, exclusive of fixed impediments, is 17,362 cubic feet, which, for number allotted to it, and after deducting 7 feet in each case for person and bedding, leaves 152 feet per head. The gun deck has 24,403 cubic feet; divided among 193, yields 119 feet for each occupant. The ventilation of this deck has been good, the gun-ports having been almost constantly open, and the hatches rarely hooded, so that even with the full number sleeping below, and in the most sultry weather, the carbonic acid has not been observed to reach more than .953 part per 1,000, except on

one occasion at sea, with ports closed, when it was found to be in the proportion of 1. parts per 1,000. The average has been .7115 parts. The superficial area of apertur to the berth-deck, through which its ventilation is accomplished, equals 188.3 squar feet. Of this amount, 37 feet aid very imperfectly. Consequently, the area of direc communication with the outer world is reduced to 151.3, and of this, only 6.7 feet through side ports, the remainder being through hatches opening on the gun-dec in various situations. As, from several well-known causes, there is little to direc regular currents through hatches, they are, of themselves, feeble agencies in ventil tion. Observations with an anemometer show the foregoing to be true, but they like wise establish that they are susceptible of becoming powerful auxiliaries to the mean usually relied upon to insure changes of air. This is accomplished by stretching canvas screen fore and aft across the mouth of a hatch, and letting it extend from nea the beams above to about the lower margin of the hatch-combing; *e. g.*, an observa tion taken when the external air was moving at a velocity of 640 feet per minute showed a downward current of only fifty feet through the main hatch, though wel exposed to an open pivot port on either side, and with the wind but little forward o the beam. Furthermore, this current occupies a very small portion of the hatch area it for the most part being taken up by broken, contrary ones of weak force; and i one corner exposed to a steerage wind-sail, an upward draught of 80 feet was detected A wind-sail such as the above was placed in position, and immediately the anemometer registered 180 feet, where it had before been 50 to 75; where previously there had bee no current, 80 feet downward draught had replaced the former upward one, and amid ship one of 200 feet was discovered. On the lee side of the screen an upward curren of 60 per minute existed. At another time when the atmospheric movement across th gun-deck was at the rate of 480 feet a minute, air was forced through the same hatch at a speed of 450 feet. This would, of course, be a dangerous draught for sleepers t be exposed to, but it serves to demonstrate what can be done. In consideration o the apparently insufficient means for furnishing the necessary changes, it might b presumed that the air of the deck in question would have become foul and unwhole some, and yet the carbonic-acid experiments display a contrary state. Two important factors, however, secured this: the midshipmen were never allowed to use this par of the ship during the daytime, thus insuring a deck full of good air at the time o their turning in; and next, the ventilating power of sails, when spar-deck hatches could be opened, aided strongly in securing this favorable result.

The midshipmen's lockers range along either side of the deck. They are permanent fixtures, but do not fit the ship's side closely, and have an insufficient space beneath for cleaning purposes, affording, therefore, both behind and below them, places for the collection of refuse material. From such accumulation and moisture, and proba bly advanced decay of the concealed wood-work, very unpleasant odors arise, indi cating a condition that might readily become an important factor in the propagation of disease. These lockers should therefore be removed, the space alluded to thor oughly cleansed and repaired, and so replaced as to admit of proper attention in future.

I have previously had occasion to advocate a reform in the matter of water-closets for the men. These, on single-deck ships, should be under the forecastle, and on gun-deck ships on the gun-deck. The cry against it is the impossibility of preventing foul odors. This vessel, where 124 midshipmen use closets so situated, is an argument in favor of the proposition and destructive to the objection. The suggestion made some time since by Lieutenant Soley, to build them on the forecastle forward of the rigging, would also be an immense improvement upon the present arrangement.

Quite an extensive epidemic of diarrhœa prevailed on board between July 5 and 15, there being 24 admissions in that period. Its cause was obscure, but I was inclined to attribute it to the use of water that had been kept in the ship for a long time, and which showed, by the imperfect tests at hand, considerable impurity. It was a source of regret that there was no apparatus on board for subjecting it to analysis.

FRANKLIN.

This vessel is still employed as a receiving and recruiting ship at Norfolk, Va. Surgeon T. C. Walton remarks in regard to the sanitary matters of the ship:

The number of persons attached to the Franklin during the year averaged 228; officers, 17; marines, 33; ship's company, 88; recruits, 90; whites, 188; colored, 40. There were 68 whites and 10 colored persons admitted to the sick-list; total admission, 78; 13 whites and 4 colored were transferred to hospital, 1 white was transferred to another vessel, and one white was granted sick-leave; total transfer, 19. Total daily sick, 5.66. No deaths occurred during the year among those sick or transferred.

The following table shows the rate of admission, transfers, &c., for 1880, and for the three preceding years:

Year.	No. on board.	Admissions.		No. of sick-days.	Daily average of sick.	Transferred.		Deaths.	
		No.	Rate per 1,000.			No.	Rate per 1,000.	No.	Rate per 1,000.
1877	155	115	741	1,116	3.05	17	109.6	4	25.8
1878	190	118	621	1,366	3.07	11	57.9	2	10.5
1879	200	117	585	1,047	2.86	10	50.0	2	10.0
1880	228	78	342	566	1.54	19	83.0	0	0.0

In 1879 there were admitted on the sick-list 30 cases of malarial fever, 10 of pulmonary diseases, 13 of venereal, and 16 of digestive diseases. In 1880 there were only 12 cases of malarial fever, 8 of pulmonary, 7 of venereal, and 5 of digestive diseases admitted. This small rate of sickness is unusual at this station. The only difference from preceding years in the conditions affecting the crew is that water from the Dismal Swamp, instead of Norfolk City, was used; the data, however, are too limited to determine whether it had any effect or not upon the general health.

The ship is in excellent sanitary condition; prompt attention has always been paid to any suggestion likely to promote the health or welfare of the crew. The provisions furnished were of the same variety as in previous years, and were generally of good quality. The water used has been exclusively from the Dismal Swamp.

I would repeat the suggestion often made that the vessel be anchored off the naval hospital grounds from April until November; that locality is believed to be much less subject to malarial influences than the vicinity of the navy-yard, and now that a medical officer resides in the yard an objection to this change of location of the ship is removed.

There were 277 persons examined on board for enlistment in the naval service during the past year; of these, 241 were found physically qualified and accepted, 36 were physically deficient, and 25 of them were rejected; the remaining 11, all of whom had seen considerable length of naval service, were enlisted by order of the Bureau of Equipment and Recruiting, waiving physical examination.

GALENA.

This vessel was in commission the latter 36 days of the third and all the fourth quarter, 1880. During her term of commission in the third quarter she lay at Hampton Roads and Norfolk, Va. During the fourth quarter, 77 days were spent at Norfolk, Hampton Roads, and Baltimore, and 15 days at sea, making, for the whole period, 113 days in port and 15 at sea.

The appended report of her sanitary condition is by Surgeon G. S. Beardsley:

The Galena was built at the navy-yard, Norfolk, Va., in 1873–'80, and was placed in commission August 26, 1880. She is a wooden, single-decked, ship-rigged, full-powered, screw steamer, of 910 tons, 216 feet long, 37 feet breadth of beam, and 15.5 feet mean draught of water. She has compound engines, with ten boilers and twenty furnaces.

Her air-ports are 9 by 12 inches in size, the dead-eye swinging on hinges, and easily secured by a screw. They are also provided with a sliding blind, by which the light may be shut out when desirable, without impeding the ingress of air.

The berth-deck is furnished with swinging tables and benches in place of the old mess-cloths, and when not in use are easily secured between the beams above. Each berth-deck mess has a locker between the air-ports, which is sufficiently large to contain the simple furniture of the mess, thus doing away with the unsightly mess-chests, and giving a more airy and roomy appearance to the berth-deck.

The officers' state-rooms have running water supplied from two tanks in the after part of the ship. The refuse water is collected in buckets placed under the basins; these not being sufficiently high above the water-line to admit of pipes being carried through the side of the ship.

Her complement is 31 officers and 205 men, and the cubic air-space is as follows:

	Cubic air-space.	Number of occupants.	Cubic air-space for each.
Cabin	4,960	1	4,960
Wardroom, including state-rooms	5,492	14	385
Steerages, including country	4,736	12	388
Two rooms for warrant officers	576	4	137
Berth-deck	13,126	145	84
Sick-bay	1,088	3	356
Prison	253		
Forecastle	6,552	60	102

The ship has not had her full complement at any time since she has been in commission, and now has but 230, which allows more air-space than is shown in the above table. As some men also are always on deck, and a whole watch at sea, the air-space of the berth-deck is still further increased.

Ventilation.—The cabin is ventilated by means of four windows, two air-ports, and two hatches, which together furnish an abundant supply of air and light. The wardroom has two hatches having a combined superficial area of 37 square feet, and twelve air-ports having an area of 9 square feet. In addition, there is a double ventilating shaft leading from the pantry in the after part of the wardroom to the poop-deck, each arm of which is 8 by 12 inches in size, and through which a current of air is almost always passing. In port, when the hatches and air-ports are open, the ventilation is excellent, and at sea it is very good, except in the state-rooms, where, on account of the closure of the air-ports, the air is necessarily somewhat confined. The steerages and steerage country have three hatches, with a combined superficial area of 76 square feet, and six air ports with an area of 4½ square feet, which in port are quite sufficient for good ventilation, and at sea also, except in the sleeping apartments. Each room for the warrant officers has one air-port 9 by 12 inches in size. The rooms open into the forward part of the steerage country very near the engine-room hatch. In these rooms, when the air-ports are closed, the ventilation is considerably defective. The berth-deck, which, by means of two passages between the engine and fire room hatches, and the berth-deck coal-bunkers, are continuous with the steerage country, has three hatches having an area of 71¼ square feet, and fourteen air-ports with an area of 16½ square feet. These furnish a fair amount of air, and the deck is probably as well ventilated as that of any ship of her class. The sick-bay has one hatch with an area of 8¼ square feet and two air-ports with an area of 1½ square feet. As the hatch opens into the space under the forecastle, the air is contaminated by the descending exhalations of the 60 men sleeping there. This is very objectionable, but with the present location of the sick-bay, it is unavoidable. The prison, which is built around the foremast on the berth-deck, receives its only supply of air from the berth-deck itself, and that through 528 small circular holes in the upper half only of the panels. The combined area of these holes is 1⅓ square feet. Had the same number of holes been made through the lower half also, the ventilation would not be so bad as it now necessarily must be. The forecastle has four gun-ports and six circular air-ports, each 7 inches in diameter. As the after part is freely open to the spar-deck, the supply of air is quite abundant. The engine and fire rooms have three hatches giving an area (after deducting one-fourth for the iron grating with which they are covered) of 79½ square feet. There are also four ventilators for the fire-room, each 12 inches in diameter, with revolving cowls which are easily turned to the wind. The temperature of the engine-room while steaming has not been excessive, and is generally from 10 to 20 degrees above that of the upper deck. The heat in the fire-room, however, is very oppressive, particularly in the forward part, and is usually from 50 to 70 degrees above the temperature of the outer air. This is owing in a great degree to the want of ventilation in the fire-room, which would be greatly improved could two of the ventilators be placed in the forward part. This, however, is not practicable, as the pivot-gun is placed directly over that part of the fire-room. Extending from the after part of the shaft alley to the poop-deck is a double ventilating shaft, each arm being six by twelve inches in size. When the ship is under way, and in port when there is a breeze, the current of air through this shaft is very considerable, and assists very materially in ventilating the shaft alley and after bilges. Were it much larger the benefit would be proportionately increased. Running from the inside of the bulwarks (commencing just below the hammock rails) to the bilges are *thirty-four* small ventilating shafts, the upper end fitted with a valve to open outwardly, thus favoring an upward movement of the air. By these means and by *frequent cleanings* the bilges are kept in good condition, and thus far have given no trouble.

Lighting.—By means of the hatches and air-ports above described the ship is very well lighted, no artificial lights being necessary below except in very cloudy weather. At night the large modern lamps with which the ship is provided are very satisfactory.

Warming.—The ship is sufficiently warmed by steam heaters, there being one in the cabin, one in the wardroom, one in the steerage country, and four on the berth-deck. One of these, placed almost against the sick-bay bulkhead, furnishes sufficient heat through the upper open part for that apartment. The ship's galley is located under the after part of the forecastle, which, when the entrance is closed by a canvas screen with which it is provided, affords sufficient heat to render it comfortable in cold weather.

Water of good quality has been obtained from Norfolk and Baltimore, and by condensation. The tanks and casks have a capacity of seventy-two hundred gallons. As the daily allowance for all purposes is three hundred gallons, the supply is sufficient for twenty-four days. The ship is provided with a common tubular distiller, capable of furnishing fourteen hundred gallons daily. The water is aerated by being passed through a sieve on the spar-deck, after which it is passed into the tanks below, and in four or five days is clear and palatable.

The food and clothing are those of the paymaster's department, and are of the usual good quality.

The sick-bay is located in the extreme forward part of the ship, which, for well-known reasons, is probably the most objectionable place that could be found. It is provided with a large bath-tub, the water for which must be brought in hand-buckets. A small pipe through the side of the ship allows of its convenient discharge.

In the absence of a water-closet, the new close stool furnished by the laboratory is very convenient.

The dispensary is small, but convenient, and is situated abreast of the forward part of the fire-room hatch on the port side. The storeroom is in the fore passage, and is of good size.

During nearly all the month of September, after the ship was placed in commission, the crew was exposed to malarial influences at the Norfolk yard. This was followed by about twenty-five cases of intermittent fever, all of them, however, of mild character.

In her passage to Europe the Galena encountered a violent gale, in which she showed herself a good sea boat, though a wet one, easily taking water through the gun-ports and gangways, and sometimes over the rail, and, by means of a leaky deck, distributing it to all parts of the berth-deck.

ALLIANCE.

During the first quarter this vessel lay at the Norfolk navy-yard. In the second quarter, 58 days were spent at Norfolk, 12 at St. Pierre, Banks of Newfoundland, and 21 at sea. In the third quarter, 18 days were spent at St. John's, Newfoundland; 3 at Halifax; 33 at Portsmouth, N. H.; and 38 at sea. In the fourth quarter, 39 days were spent at Hampton Roads; 10 at Savannah, Ga.; 3 at Port Royal, S. C.; 1 at Key West, Fla.; 5 at Vera Cruz, Mexico; 1 at Tuxpan, Mexico; 2 at Tampico, Mexico, and 26 at sea. During the year 1880 the Alliance was in port 281 days, and at sea 85 days.

In his report Passed Assistant Surgeon H. C. Eckstein states as follows:

The complement of the ship's company at the end of fourth quarter, 1880, was 173, and the average for the year has been about 160.

While undergoing repairs at the navy-yard, Norfolk, the sick-bay was enlarged by the addition of space taken up by two small rooms used as a cell and storeroom, and the cubic air-space is thereby increased to 1,268.3 cubic feet. I have the same objections to location of sick-bay that have been so often urged by other medical officers. Sunlight and pure air are important curative agents, and these are sadly deficient in the sick-bay as at present located. The noise overhead produced in weighing and dropping anchor tends to aggravate a case of sickness attended with nervousness or cerebral disturbance. The ship's bell, placed near the sick-bay hatch, is also a disturbing influence. The carpenter's bench is placed under the top-gallant forecastle, and, when work is being done, is a source of annoyance to the sick. If the sick-bay is to be the station of the surgeon in action, or at general quarters, the hatch, which is now only 3 by 2½ feet, should be enlarged so as to permit the passage of an ambulance cot of the most approved pattern. The earth-closet, supplied to the ship, has been found very useful in the sick-bay. At the navy-yard, Norfolk, two copper ventila-

tors have been introduced, one on each side, communicating with the berth-deck, with a diameter of 19 inches, which have produced a beneficial effect in improving the ventilation of the berth-deck. A new brig has been constructed on the berth-deck, around the foremast, with a cubic air-space of 212 cubic feet, which has 388 holes of a half-inch diameter around the upper part for ventilation. A double ventilating chute, communicating with the pantry at the after part of wardroom, has also been introduced, and this has had a decided effect in improving the ventilation of the wardroom. The shellacking of the berth-deck is a decided improvement over the deluging and holystoning at one time in vogue.

YANTIC.

This vessel went into commission about the beginning of the fourth quarter, 1880, during which quarter she lay 20 days at Washington, 18 at Hampton Roads, and 53 at Norfolk.

Passed Assistant Surgeon H. P. Harvey states:

The Yantic was almost entirely rebuilt prior to her going in commission last October, consequently is nearly new.

Ventilation.—The ventilation of the ship is moderately good. The cabin has four large gun-ports 3 by 2½ feet, four square air-ports 12 by 8 inches, and a circular skylight 2 feet in diameter, its air-space being 2,160 cubic feet. The wardroom is lighted and ventilated by two doors, two skylights 3 by 2½ feet, eight square air-ports 12 by 8 inches, and two gun-ports 3 by 2½ feet, and its nine occupants have 368 cubic feet of air-space each. It is unusually well lighted and ventilated. The pantry is on deck, forward of the wardroom. The steerage has four round air-ports 9 inches in diameter, and a hatch 5 by 3½ feet for the companion ladder, besides two dead-lights 1 foot in diameter, one on each side, in the quarter deck, which screw in, and can be utilized for ventilating purposes. There are ten occupants, with an air-space of 259 cubic feet each. The berth-deck is ventilated by ten 9-inch air-ports, and two hatches for ladders, one forward 3 by 5 feet, and one aft 5 by 6 feet. There are spaces over the sister knees leading to the intervals between the timbers. All the store-rooms and hold forward are ventilated into the berth-deck, which has 89 occupants, with a cubic air-space of 75 feet each. Although the air-space is so limited, the arrangement of the two hatches gives a continuous current, and when they are not covered over—as during cold and rainy weather—the air is pretty good. The average percentage of carbonic acid gas for the month of November was 2.031, and for December, 2.360. The forecastle is well ventilated by four small round air-ports, two large gun-ports, and by opening aft. There are 34 occupants, with a cubic air-space of 153 feet each. The store-rooms aft, under the wardroom, all open in a common passageway leading to the steerage, and are ventilated through it and through a small hatch in the wardroom deck. The bilge can only be ventilated through the store-rooms and holds leading to it. The spaces between the timbers are ventilated by circular openings 3 inches in diameter, covered by fine iron gratings. They are situated at small intervals all around the ship, being inboard between the forecastle and poop, and outboard the rest of the way.

Heating.—The ship is heated fore and aft by steam coils—there being two small ones in the cabin, one large in the wardroom, one in the steerage, and one on the berth-deck. The forecastle is heated during severely cold weather by the galley.

It is recommended that the two steerage deadlights be utilized for windsails by fitting them with coppers to prevent water from running in, and that the dispensary be enlarged laterally three feet. Its present size is 6 by 3½ feet, with a large knee dividing it in two sections.

TALLAPOOSA.

This vessel was employed during the year as dispatch and freight boat, plying to and from the various naval stations along the North Atlantic coast.

Passed Assistant Surgeon P. M. Rixey reports that—

The complement of officers and men is 100; cubic feet air-space allowed each individual on berth-deck forward, 312; after berth-deck steerage, 454; wardroom, 450. The air-space allowed each individual on spar and hurricane decks is abundant, and is not given, as the number of individuals varies with each trip of the ship and the amount of space occupied by the cargo. Daily average of patients for the year was $2_{3\frac{3}{5}}$, not including passengers.

Ventilation of the spar and hurricane decks, being well supplied with doors, windows, and hatches, is excellent, but that for the berth-deck (the quarters for the *greater portion* of officers and men) is defective, due to want of facilities for cleansing *the bilges and* changing the air.

Lighting is excellent except the berth-deck, steerage, and wardroom, the latter being the poorest, rendering it necessary to keep an artificial light constantly burning.

Warming is by steam, and is all that is required.

The ship having a flat bottom, the bilge extends over quite a large area; it is impossible with the present facilities to properly cleanse or disinfect it, except in the engine-room, where the floor (bilge-plates) is movable. I would recommend that the flooring (bilge-boards) of the holds fore and aft and the store-rooms be made in sections, so that every portion of the bilge may be accessible. To improve the ventilation and lighting of the berth-deck, I would suggest replacing the present old 9-inch round air-ports with the large round or square ports. The ward-room, the poorest ventilated and lighted portion of the ship, should have its one hatch made double its present size and two ventilators passing from the hurricane deck.

GEDNEY.

This vessel was employed during the year in Coast Survey duty in the Gulf of Mexico. Passed Assistant Surgeon J. H. Hall remarks in regard to the ship:

That she is a strongly built, composite, screw vessel of about 150 tons; over all she is 145 feet, with 23 feet beam, and a draught of 7½ feet.

The berth-deck extends from the eyes of the ship aft to the engine-room bulkhead, a distance of 28 feet; the engine-room, galley, and chart-room are on the upper deck; the wardroom and cabin are in the after part of the vessel, on the same level with the berth-deck.

The average number of officers and men on board during the year was 35; of this number 8 were officers and 27 men.

The cubic air-space allowed each individual on the berth-deck is 185 cubic feet; the wardroom 314 cubic feet; and the cabin about 2,766 cubic feet.

The ventilation and lighting are as satisfactory as could be attained on vessels of this class; the berth-deck has a cubic capacity of 3,324 feet, and the hatchway opening on the spar-deck is 5 feet 9 inches square, besides two large ports in the forward part of the deck, and a scuttle through the upper deck aft; 18 men are berthed, or rather swing on this deck, and six are quartered on the upper deck. The wardroom and cabin are thoroughly ventilated by very large hatches, doors, and ports. As the bunks in the wardroom are double, it would add very much to the comfort of the officers if the lockers on one or both sides were removed and single bunks placed in the spaces; locker-room could be found in the wash-room. The curtains and rods that are pushed out in front of the bunks for privacy are more desirable than doors, as thorough ventilation could not be secured in so small a space were the bunks bulkheaded off.

BLAKE.

The steamer Blake, one of the vessels employed on Coast Survey duty along the Atlantic coast. Passed Assistant Surgeon R. C. Persons reports:

This is a schooner-rigged vessel of 350 tons measurement, and carries a crew of 49 men all told. She is a good sea boat for ordinary weather, and dry unless going against a head sea and wind. She has a spar, main, and berth deck, the latter extending only about a quarter of the distance from forward aft. The spar-deck is covered by awnings extending the whole length of the ship, which are kept spread, unless in very bad weather. The deck is kept well painted, is washed down daily, and dries quickly.

The cabin has a cubic capacity of 3,595 feet, and contains two state-rooms, bath-room, and water-closets. It has two revolving ventilators aft, a large open sky-light, and thirteen air-ports, each 11 inches in diameter. The number of occupants varies from one to five. Between the cabin and wardroom, with doors leading into both and closed in by the bulkheads of the two, is the after hatch and cabin pantry.

The wardroom contains nine rooms, which, with the addition of the country, has a cubic capacity of 3,195 feet. It is ventilated by a large open sky-light, by large air-ports 11 inches in diameter in the rooms, and three doorways, one leading into the after hatch and one into each of the two gangways mentioned above, and is free from the great nuisance of a pantry.

Next to the wardroom is the engine-room, which has a door and two windows leading into each gangway and an open sky-light, so that it is cooler and more comfortable than engine-rooms generally.

The cubic capacity of the berth-deck is 1,680 feet, and as at sea half of the men are on deck all the time, the air-space varies from 153 feet to double that amount.

It is ventilated by a hatch 60 by 60 inches and eight air-ports each 7¼ inches in diameter. At sea, unless the weather is pleasant, these air-ports are kept closed. There is always a windsail leading to this deck.

This ship has no sick-bay. The bilge, from the construction of the ship, has an incline of 3 feet, so that all the material collects aft. This is pumped off once or twice daily and carbolic acid freely used. It is open its whole length and is often inspected, and, in comparison with other vessels, there is little cause for complaint. It has a ventilating shaft leading from the after end, through the cabin, above the spar-deck.

The main deck is washed down daily, is well swabbed, and dries quickly. The berth deck is shellacked, is swabbed twice weekly, and is always dry and pleasant.

To the thorough ventilation and dryness of the ship, the general good condition of the bilge, the abundance of fresh provisions, the kind and sufficiency of clothing, the amount of exercise on shore, and attention to personal cleanliness I attribute the remarkable good health which all have enjoyed.

DISPATCH.

This vessel was in commission 23 days of the second quarter, 65 of the third, and 65 of the fourth. During the second quarter, 20 days were spent at Washington, Annapolis, Norfolk, and New Castle, Del., and 3 at sea. In the third quarter she was employed on a practice cruise with cadet engineers from the Naval Academy, and spent 57 days at the usual visiting points on the Hudson and Delaware Rivers, Long Island Sound, and New England coast, 7 days at sea. In the fourth quarter, the 65 days were occupied at Norfolk and Washington. During the entire term of her commission in 1880, 142 days were spent in port and 10 at sea.

DALE.

This vessel was employed 21 days of the second and 40 days of the third quarter of 1880 in the regular annual practice cruise on the Chesapeake Bay, with midshipmen from the Naval Academy.

NIPSIC.

This vessel was on the North Atlantic station the first quarter of 1880, during which period she lay at Norfolk, Va., 25 days, in Hampton Roads 3, St. Thomas 8, Barcelona, Cumana, La Guayra, and Campana 14, Trinidad 5, and was at sea 36 days.

WYANDOTTE, PASSAIC, MONTAUK.

Iron-clads.

These vessels lay at the Washington navy-yard during the year.

LEHIGH, AJAX, MANHATTAN, MAHOPAC, CATSKILL.

Iron-clads.

These vessels were at Brandon, on the James River, Va., during the year.

BACHE.

Coast Survey steamer.

This vessel was at Charlotte Harbor, Fla., during the first quarter. In the second quarter she lay 6 days at Key West, 28 at Baltimore, and was 56 days at sea. The third and fourth quarters, except 5 days at sea, were spent at Baltimore and Norfolk undergoing repairs. During the year the Bache lay in port 305 days and was at sea 61 days.

MEDICAL TOPOGRAPHY AND SANITARY REPORTS.

REPORT OF MEDICAL INSPECTOR C. J. CLEBORNE,

Surgeon of the Fleet, North Atlantic Station.

UNITED STATES FLAG-SHIP TENNESSEE.

Barbadoes.—This is an island of volcanic origin and coralline formation, and is one of the most healthful of the Caribbean group. It is the best watering place in the West Indies for ships, the water being cheap and of excellent quality. The island contains 106,470 acres, and in 1871 had a population of 161,594; now it has probably 180,000, of whom about one-fourth are white. The climate is good, the thermometer rarely falling below 73° Fahrenheit, or rising above 85°; but after the second summer it becomes enervating to foreigners. The best time for exercise is early in the morning, late in the afternoon, or in the evening, so as to avoid the heat of the day, which is intense between 12 and 4 p. m. The death-rate, especially among the negroes, is quite large, probably 60 to 80 per 1,000, but as there is no proper system of registration, the actual death-rate is unknown. There are no malarial fevers, and epidemics are rare. The prevailing diseases are mild remittents, measles, scarlet fever, dysentery, lung affections in the rainy season, and typhoid, the result of overcrowding and unsanitary condition of dwellings. In 1852, yellow fever of a fatal type appeared, but very few cases have since occurred, and as these were not traced to introduction, they were probably a low type of bilious remittent. The favorite treatment for this disease among the negroes is castor-oil and lemon-juice, followed by copious libations of strong coffee, and it is a little curious that this acid treatment is in favor with some of the most successful practitioners. Cholera was very fatal here in 1854, and from 1859 to 1864 small-pox was epidemic. "Barbadoes leg" is the most common form of leprosy; it is considered by some a parasitic disease, but the "filaria" theory is not generally accepted here. Vaccination is not enforced by law in this or the neighboring islands, so that the greatest watchfulness is necessary to guard against the introduction of small-pox. There is less typhoid in the town than in the country, and this is ascribed to the abundance and purity of the Bridgetown water. The board of health in Bridgetown is so badly organized that it is next to impossible to get any reliable vital statistics, and this is the case in nearly all the British colonies in the West Indies. Morality is at a very low ebb among the colored population, though prostitution is not licensed in the towns. A "lock hospital" has been established in Bridgetown, where weekly examinations are made and certificates issued, the result being a decided decrease in venereal disease. There is also a well-managed general hospital or infirmary, with accommodation for 250 patients, the service of which is conducted by a staff of English and Scotch physicians.

Quarantine.—This is under the immediate control of a quarantine physician, who acts under a board of health commissioners, from w-

there is no appeal. This being a colony governed by a legislature, the governor has little or no independent authority, and none over quarantine. The captain of the port (usually a naval officer), or harbor-master, visits ships upon arrival and reports their sanitary condition to the quarantine physican, who personally inspects the ships if necessary, and reports to the board. This report is transmitted, through the colonial secretary, to the governor for his approval. The latter, like nearly all official approvals, is a mere form, for should any question arise as to the detention of vessels in quarantine, the report is returned through the board to the quarantine physician for reconsideration, and his action thereon is final.

The need of an international bill of health is becoming daily more apparent. At present there appears to be no system in quarantine regulations or in the forms of bills of health. Each foreign port has its own forms and rules, and these are liable to constant change. Little reliance is to be placed upon the statements of consuls, captains of ports, or harbor-masters, regarding the sanitary condition of a port, as they are all more or less interested in the arrival of a ship. The safest plan is to obtain all information on medical matters directly from the board of health, or from regular practitioners on shore.

Social condition.—The prosperity of Barbadoes mainly depends upon its agricultural resources. The island is very fertile, but its laboring population is in a state of great distress, the result of unjust contract laws, overcrowding, and planter legislation. At present there is an immense amount of destitution without adequate means for its relief, arising from bad management and too great a population. Before emancipation, most of the land was held by white proprietors in freeholds ranging from five to fifty acres, which was cultivated by their slaves. Many of these landowners or planters were merchants or tradesmen who accumulated large fortunes and returned to England without doing much for the improvement of the island. Next to these were the holders of three to five acre lots, who were (and are still) the real yeomanry of the place. These cultivate their own land, and are a thrifty and independent body. Then come the horse and mule owners, an industrious class, who do most of the carrying trade of the island; and lastly, there are the donkey-cart drivers, mechanics, boatmen, and laborers, forming a mixed population, who earn a precarious living. Immediately after emancipation, most of the larger proprietors, and many of the smaller ones, sold out their lands in small lots of three to eight acres to white and colored people, who had become a sort of middle class in the country villages scattered through the island. These proprietors do not always cultivate the whole of their lots, but rent out house lots to the laboring people at exorbitant rents. It is among the latter class, densely herded in these villages, that so much poverty, ignorance, and vice is to be found. The social and moral condition of the laborers on the sugar plantations and in the towns is no better, owing to poverty and overcrowding—four or five persons living in a shed not more than 7 feet square. A vein of improvidence runs in these people; they live from hand to mouth, and are satisfied with their filth and pauperism. The remedy for these evils is to be found in emigration—in a depletion of the surplus population—rather than in goverment relief funds, charitable institutions, or other inducements to pauperism.

Army hospital.—This is a garrison hospital, under the command of a surgeon-major. It is situated on the Bay Road, within a convenient distance of the barracks. The sick are daily marched to the hospital

for treatment, but a few cases are treated in quarters. The main buildings of the hospital consist of two pavilions, each 150 feet in length, built of coral rock and painted externally. These are surrounded on all sides with a wide veranda, from which may be obtained a fine view of the sea and the surrounding country. In front of the hospital is a spacious court-yard, provided with seats under the fine old trees (*Ficus arenaria*), whose spreading branches and dense foliage give a grateful shade to the convalescents. On the opposite side of this court-yard are the administration buildings, also built of coral rock and yellow-washed. These buildings are older than the hospital, and contain the surgeons' offices, surgery, dispensary, hospital library, knapsack-rooms, guard-rooms, prison cells, kitchens, &c., all in excellent order and exquisitely clean, but not fully up to the standard of our own service. The hospital wards are 120 feet by 25 feet, and are well ventilated by large windows, between each of which is placed an old-fashioned iron bedstead. The wards are very high, and each patient has a cubic air space of not less than 2,000 feet. At each end of a ward are placed the water closets, bath-tubs, and urinals, all in good order and free from odor. The bedding of each man is rolled up and placed at the foot of his bed, in order to prevent lounging upon the beds during the day. Each ward has a ward-master and two orderlies, one for every ten patients, and the discipline and organization of each ward are perfect. The upper wards are occupied by the white troops and the lower ones by the colored soldiery. There were few cases in hospital at the time of my visit, principally accidents and light febrile disorders. The white soldiers rapidly convalesce in this climate, but the negroes are slower in recovering, and are said to be moody, despondent, and ungrateful.

At the end of the court-yard is the barrack of the "army hospital corps," a small detachment of which (consisting of hospital sergeants and orderlies) is stationed here. The corps is a picked body of men, specially selected for intelligence, sobriety, and fitness. It grew out of a necessity long felt in the British army for a force specially trained for hospital service, who could be placed under the exclusive control of the medical staff.

The garrison.—About a half a mile beyond the military hospital is the parade ground or "savannah," and around this are grouped the garrison buildings, consisting of general offices, officers' quarters, and barracks for the troops. The buildings are mostly of coral rock, painted or yellow-washed, and their sanitary condition is all that could be desired. Very few cases are treated in barracks, and applicants for the excused list are marched to the hospital for examination and treatment. The hospital guard and sentries are detailed every day from the garrison, but the service upon the sick is performed by the men of the hospital corps.

The strictest discipline is maintained in the military hospital, and there is no interference with the medical department in the management of its own affairs.

Santa Cruz.—The Danish island of St. Croix is of volcanic origin, and is subject to earthquakes, and during the hurricane season to violent storms. It is one of the gardens of the West Indies, and is particularly adapted to the raising of sugar-cane, but the failure of the recent crops consequent upon droughts, and the difficulty in obtaining labor at a reasonable rate, have nearly destroyed the prosperity of the island. Here, as at Barbadoes, the labor question is an important problem. Under yearly contracts the negroes were employed at 10 cents per diem, in addition to which they were allowed to cultivate small patches of land

for their own use, and to keep poultry; but since the abolition of the contract system, laborers have been employed at 20 cents per diem, and no privileges are allowed.

The result has, of course, been unfavorable to the negro, and the supply of labor has become so uncertain and irregular that sugar plantations may be bought at half their value on the island.

The present population is about 23,000, of whom 20,000 are blacks. Frederickstaed, the chief commercial town, contains 3,500 of both races, and the trade of the place is improving. The town is generally healthy; the prevailing diseases are the various forms of leprosy, ephemeral fevers, climatic fever, remittent fevers, consumption, dysentery, rheumatism, and small-pox; the latter was epidemic at St. Thomas, distant only 40 miles.

The hospital is a small building, 40 by 50 feet, two and a half stories high, and is in a very bad condition. It will accommodate about 40 patients, but the wards or rooms are execrable. There is a board of health, consisting of the King's physician, a member of the council, the police superintendent, and the quarantine officer; bills of health are signed by the King's physician and the vice-governor, and are issued by the collector of customs upon application. There is a system of vital statistics, but it is very imperfect, and as usual in the West Indies it is impossible to find out the actual death-rate of the island; it is probably 40 per 1,000.

REPORT OF SURGEON T. C. WALTON.

UNITED STATES RECEIVING SHIP FRANKLIN.

Norfolk.—The following is the meteorological record of Norfolk for the year 1880 as reported by the Signal Service officer; also the means of the two preceding years. The rainfall was about the average. The greatest cold was in December; generally it is experienced in January.

Month.	Barometer.				Thermometer.				Humidity.				Wind prevailing.	Rain.
	Mean.	Max.	Min.	Range.	Mean.	Max.	Min.	Range.	Mean.	Max.	Min.	Range.		Inches.
January	30.19	30.54	29.61	.93	49	67	27	40	78.8	100	37	63	N.	1.42
February	30.16	30.65	29.33	1.32	48.9	78	22	56	69.1	100	34	66	S.W.	1.67
March	30.07	30.51	29.42	1.09	48.5	81	27	54	72.9	100	37.7	62	N.	5.34
April	30.07	30.41	29.66	.74	60	84	27	57	58	100	18	82	S.W.	1.83
May	30.10	30.38	29.89	.48	73.4	98	45	53	55.9	88	24	64	S.W.	.54
June	30.04	30.29	28.63	.65	76.6	101	58	43	61.8	100	24	76	S.W.	5.34
July	30.02	30.22	29.72	.49	80.2	102	63	39	67.8	100	33	67	S.W.	7.84
August	30.06	30.39	29.79	.59	76.8	95	62	33	73.8	100	34	66	S.W.	9.90
September	30.07	30.39	29.75	.63	71.3	96	54	42	70.4	92.3	44.7	47.6	S.W.	4.07
October	30.13	30.45	29.59	.85	60.6	82	39	43	68.1	90.8	48.5	42.3	N.E.	3.08
November	30.24	30.72	29.70	1.02	47	72	24	48	73.7	100	43.7	56.3	N.	5.64
December	30.06	30.55	29.50	1.05	36.2	70	6	64	74.8	96.3	51	45.3	N.	5.15
Mean 1880.	30.10	30.46	29.63	.825	60.7	85.5	37.8	47.6	68.7	97.2	35.8	61.4	.....	*51.82
Mean 1879.	30.07	30.50	29.57	.925	59.4	85	37	48	68	99	33.7	65.3	.....	*35.88
Mean 1878.	30.00	30.37	29.50	.945	60.3	82	41	41	73.7	99.4	39.9	59.5	.....	*51.87

* Total.

The mortality rate of Norfolk for the year has slightly increased over that of the year previous, which was considered exceptionally high, showing the persistence, if not increase, of the causes which produced it. The recent census having established the population at a lower number than that upon which previous mortality returns were based, another table has been prepared with the calculations made upon the census returns of 1870 and 1880. Access has not been had to these returns in the preparation of this report, consequently it cannot be stated what proportion the number of children of any age bears to the entire population. The census of 1870 fixed the population at 19,500: Whites, 11,750; colored, 7,750. That of 1880 at 21,996; the proportion of whites to colored has not yet been announced. The same ratio as in the former has been taken, with an annual increase of 150 whites and 100 colored, bringing the total population in 1880 up to 22,000. (For table see below.) Burial permits have been required since 1875. The mortality records of the city do not contain reliable data of the relative mortality of the races nor causes of death prior to 1877. Of the 775 deaths that occurred in 1880, 224 were under 1 year, 120 from 1 to 5 years, 38 from 70 to 80, 15 from 80 to 90, and 5 were over 90 years of age.

Deaths at all the city public institutions are included in this table. They amounted during the year to 75.

Mortality rate in Norfolk from 1870 *to* 1880, *inclusive.*

Year.	Total deaths.	Rate per 1,000.	Whites. No. deaths.	Rate per 1,000.	Colored. No. deaths.	Rate per 1,000.
1870	440	22.50	.....	.....	.....	.....
1871	559	28.30	.....	.....	.....	.....
1872	689	34.45	.....	.....	.....	.....
1873	614	30.32	.....	.....	.....	.....
1874	554	27.04	.....	.....	.....	.....
1875	504	24.28	.....	.....	.....	.....
1876	502	23.90	.....	.....	.....	.....
1877	568	26.73	233	18.20	335	39.64
1878	506	23.53	206	15.90	300	35.08
1879	754	34.66	330	25.19	424	49.01
1880	775	35.23	347	26.17	428	48.94

In October last the board of health instructed the health officer to omit from his reports deaths occurring at the Almshouse and Hospital of St. Vincent de Paul; since then they have not been embraced in his returns to the National Board of Health. It being understood that similar deaths are not included in the published mortuary statistics of other cities, it was believed that Norfolk was injured by an unfair comparison. The value of the statistics is impaired, however, by the omission. The inmates of the almshouse and hospital are residents of the city, except the sailors in the latter, under the charge of the Marine Hospital Service, and a few of the charity patients. There were during the year 12 deaths among the sailors, the same number among the charity patients, half of whom probably belonged to the city, and one death at the pest-house, from variola, also not included—19 altogether; these would probably be nearly, if not wholly, offset by the number of

residents of Norfolk that died away from home. For comparison the principal causes of death during the past four years are here tabulated:

Year.	Phthisis.		Pneumonia.		Dysentery, diarrhœa, cholera infantum.		Diphtheria.		Malarial fever.		Typhoid fever.	
	White.	Col.	White.	Col.	White.	Col.	White.	Col.	White.	Col.	White.	Col.
1877..	40	49	23	47	31	43	3	4	5	20	5	7
1878..	23	48	21	28	24	20	3	2	15	22	3	2
1879..	39	46	27	48	39	54	10	8	19	26	5	16
1880..	40	50	17	34	42	48	41	34	17	34	6	5

If this table indicates anything, it is that diphtheria, malarial fever, and the digestive diseases are on the increase; that, compared with the total deaths, the first is more prevalent among whites than colored, and that in the other diseases the negro is more frequently the victim. This may be accounted for in the cases of pneumonia and malarial fever by their ordinary occupations exposing them more to the causes; their excess of mortality generally, to the lack of almost all sanitation in most of their dwellings, want of medical aid and of ordinary care and nursing. The number of still-births among them is nearly treble that among the whites; deaths from premature and preternatural births, deaths from general debility and inanition are about double. Their poorer physique is not so much a factor of these results as their ignorance, superstition, vices, and improvidence.

During the past summer the Norfolk city councils appointed a commission of prominent citizens to devise means for the general improvement of the city, such as drainage, sewerage, widening and opening of streets, &c. The drainage and sewerage questions were thoroughly discussed, and several plans proposed. The most prominent was the connection by canal of two inlets of the Elizabeth River that intersect the city near its opposite limits, and receive a portion of its drainage; to extend drains and sewers into this channel, and by means of flood-gates to cause it to be flushed with tidal water. There is a wide difference of opinion regarding its practicability; no sanitary engineer has been consulted, and the councils thus far have taken no action in the matter except to expend a few idle words. Nothing will be done before another winter, and probably not then unless the mortality rate increases sufficiently to alarm the public.

A committee was also appointed to examine the city water, its source of supply, &c. The water was reported to be potable, and as not having materially affected the public health. The ponds from which it is obtained were found to contain a large accumulation of decaying vegetation; it was recommended to have them cleaned as soon as practicable, and that means be adopted to prevent further contamination. These recommendations are now being carried out. About 800,000 gallons of this water are daily pumped into the city. Specimens of it and of Dismal Swamp water are being examined at the naval laboratory, Washington; owing to an accident the result has not been obtained in time for this report.

The great want of Norfolk at present is an efficient system of drainage and sewerage; the high rate of mortality is no doubt largely owing to this defect. The attempt to lessen this rate by omitting deaths that *legitimately* belong to it, and estimating the population at a figure known

not to exist, as is done in the published mortuary reports, can only do harm, by blinding the people to the dangers that surround them. The city is poor, and the rate of taxation high; but not to a degree that would preclude the adoption and carrying out of all reasonable sanitary measures. Public opinion, however, has not yet been sufficiently awakened to their necessity.

The last census gave Portsmouth a population of 11,500; it is believed about one-third are colored. There were 300 deaths reported during the year, making the mortality rate 26.08 per 1,000; of these 156 were white and 144 colored, or at the rate of about 20.35 per 1,000 for whites and 37.54 per 1,000 for colored. There were 68 deaths of persons under 1 year of age, 46 from one to 5 years, 21 from 70 to 80, 13 from 80 to 90, and 1 over 90 years. In nearly one-third of the death certificates the cause is stated as unknown; in 29, phthisis is given; 13, pneumonia; 13, diphtheria; 8, malarial fever, and 7 typhoid fever; but of course such imperfect statistics are of no value. Burial permits are not required, though it is believed the total mortality as stated is nearly correct.

In December last a case of variola appeared in Portsmouth, said to have been contracted in Philadelphia; during the five weeks ensuing 8 other cases have occurred, all traceable to the first one. About a week afterwards the disease appeared in Norfolk in a sailor recently arrived from Baltimore; he was sent to the hospital of St. Vincent de Paul before the disease was recognized, and remained there about 12 hours when he was transferred to the pest-house. Twelve days afterwards four patients of the ward in which he was placed were attacked with the disease and were immediately removed. Since then no other cases have occurred. Free vaccination is offered the poor of both cities, and the usual sanitary precautions adopted, but they do not appear to have been faithfully carried out in Portsmouth.

REPORT OF PASSED ASSISTANT SURGEON J. H. HALL.

UNITED STATES STEAMER GEDNEY.

Galveston, situated in latitude 29° 18′, longitude 96° 26′, stands on the northern extremity of Galveston Island, which is a low, sandy strip of land, about 27½ miles long, and from ½ to 2½ miles in breadth, running about NE. and SW. The town is located on the highest portion of the island, on an average of 7 feet above the sea level—a few points of the town reach as high as 13 feet. Owing to the immense bays to the northward of the city, where the water from the sea is forced in great quantities during the prevailing SE. winds, and the very limited points of egress, it follows that in case of sudden shifting of wind to the northward, when it blows with great force, the city is in great danger of inundation from the sea. This occurred in 1875, when the water swept entirely across the city, running into the Gulf beyond; only one life was lost, however, in the city proper. It is thought, however, that owing to the extensive low lands over which water may spread, little danger is to be apprehended from this source. Galveston has a mixed population of about 23,000 inhabitants; about one-third are foreigners.

In the environs of the city, on the SW., are salt-water marshes which are flooded daily by the tides, rendering danger from malarial infection very slight. The town is laid off like a checker-board, the streets bein

very wide, clean, and well paved. The business houses are substantial brick and stone structures, and the dwellinge are built of wood, well ventilated by numerous large doors and windows, and protected from the protracted summer's heat by beautiful shade trees and shrubbery.

No system of drainage or sewerage has ever been adopted here; the whole surface of the land is so flat that it would be a very difficult undertaking. The well to do classes have closets and privies, which are emptied several times during the year, but the greater portion of the population use open privies, the excrement being carried through the porous sand to tide-water.

The water supply is obtained entirely from cisterns, and the quality is most excellent, but in long droughts its want is often keenly felt, and a proper supply in such emergencies is a constantly perplexing problem.

The St. Mary's Hospital, which is under the charge of the Sisters of Charity, is the only institution for the care of the sick in the city. This is a general hospital, with a capacity of 300 beds, taking all classes of diseases, injuries, lying-in patients, &c. The city and county has all its sick cared for by contract, and the Marine Hospital Service have several wards rented here.

The hospital is a large, rectangular brick building, three stories high, 160 feet long by 60 deep, and facing the bay. I saw nothing in the internal arrangements of the hospital worthy of particular mention. The plan of the first and second floors is very similar; hall-ways running the entire length of the building in front, intersected by others running across; opening into the halls that extend the length of the building are the ward doors; the wards extend nearly the depth of the building, opening on a covered veranda in the rear. The length of the wards is 40 feet, the width 24 feet, and the height 15 feet, with a cubic capacity of 1,400 cubic feet for each bed; in each ward are ten iron bedsteads. Two large windows and one door at each end of the ward give free ventilation, and each ward has steam coils in the center for heating purposes. The upper wards are more crowded and not so well ventilated; 1,000 cubic feet per man is about the space afforded for each bed. Water-closets are on each floor near the termination of the halls. Steam engine, dormitory for Sisters of Charity, women's ward, and lying-in wards are wooden structures and are outside the main building. The women's wards were very dark and appeared to be poorly ventilated. About 30 women are confined annually in these wards.

Galveston is one of the most healthy cities in the United States. According to the testimony of a very eminent surgeon here, who has had a wide and extended general practice for years, absolutely no diseases have their origin here, except mild catarrhal and rheumatic affections. He had never met with a case of typhoid or typhus fever that had originated here; possibly the exclusive use of cistern water may account for this striking immunity.

Pulmonary troubles do not do well, possibly on account of the humid condition of the atmosphere. Cholera has never been known except sporadically. Yellow fever in 1867 was very severe, about 14,000 cases having occurred, the city being very filthy and crowded with soldiers and camp-followers at the time; in 1870 there were 40 or 50 cases; in 1873 a few cases only appeared.

The Texas Medical College, located here, had 21 matriculates in 1879 and 1880, and 8 graduates.

The prevailing winds along the coast are from the southeast, but frequent and violent gales are prevalent during the winter season. Through

the long hot summer there is nearly always a breeze from the sea, which makes a delightful climate, if one avoids the direct rays of the sun.

During the month of February at Galveston and Indianola the mean daily temperature was 65° Fah.; wet bulb, 62°; barometer, 30.17. For the month of April, 79°; wet bulb, 76°; barometer, 30.23. For July, 81°; wet, 81°; barometer, 30.19. For October, 74°; wet, 70°; barometer, 30. The evening and night temperature was not recorded in the log, but the variation is slight. The highest temperature reached during the summer at Galveston was not above 95° Fah., and this temperature occurred but two or three times during the season.

Indianola, Tex., is about 120 miles southwest from Galveston, situated on Matagorda Bay. The entire population of the town is not now more than 1,000 inhabitants. Previous to 1875, when they were visited by the same destructive storm that swept over Galveston, it was quite a flourishing village. About 300 souls perished during this cyclone, and its inhabitants live in constant dread of a recurrence.

The climate and topography do not differ from those of Galveston, and do not require separate notice. Malarial troubles are unknown; mild catarrhal and rheumatic affections are met with. Yellow fever was very destructive here in 1867.

In October, after making a short stay at New Orleans for repairs, the vessel proceeded up the river as far as *Donaldsonville, La.*, which is about eighty-five miles above New Orleans, and took up surveying work on the river. The entire country, as far up the Mississippi River as Baton Rouge, is below the river level at high water, and is protected from constant overflows by artificial embankments from seven to ten feet high. About three miles on each side of the river the land is cultivable, yielding abundant crops of sugar-cane, rice, and oranges. Back of these narrow strips of arable lands are impenetrable swamps and bayous, filled with a dense growth of cypress and underwood. It naturally follows from the constant ditching and cultivation of the moist alluvial soil, taken in connection with the close proximity of extensive mouldering bogs and decaying débris along the river banks, and the excessive heat of summer, that malarial fever, in all its forms, is rife, and constitutes a terrible plague at certain seasons of the year; nor does the winter season put a stop to the ravages of the poison. Although the past winter has been the most severe known here for years, quite a number of cases of intermittents made their appearance among previously healthy men on board. The introduction of extensive rice culture, where vast tracts of country are flooded for its growth, has very materially increased the ravages from malarial infection. I am told by local physicians that a number of cases of the hemorrhagic form of fever are met with, the blood appearing sometimes from the stomach and bowels and sometimes in the urine; instead of the cold stage, intense nausea and vomiting supervene, the hot stage following in order.

REPORT OF PASSED ASSISTANT SURGEON H. C. ECKSTEIN.

UNITED STATES STEAMER ALLIANCE.

St. Pierre is in latitude 46° 46′ 46″ north and 56° 10′ 36 has a population variously estimated from five to six th group of islands belongs to France. St. Pierre is a rem place. There is one hospital on the island, l'Hôpital d

is a large and commodious three-story brick building, with four wards, seventy beds, and thirty patients. The hospital is in charge of a French naval surgeon, and there are four Sisters of Charity, who perform the duty of nurses. I was much pleased with the general appearance of the hospital, and especially the bedding and cuisine.

St. John's, N. F.—There are two hospitals here, the old hospital, which is reserved for fever patients, and but seldom used, and the new hospital, which is located in an elevated position above a small lake. It is a two-story stone building, with two large and two small wards, fifty beds, and thirty patients. Every part of the hospital presented a scrupulously neat appearance. There are two visiting surgeons. The principal diseases were acute and chronic rheumatism and diseases of the respiratory organs. There is also a hospital for contagious diseases, but containing no patients. The only asylum for the insane in Newfoundland is located in St. John's. It is an imposing structure, with beautiful surroundings, and is well supplied with patients.

SANITARY CONDITION

OF THE

SOUTH ATLANTIC STATION.

SOUTH ATLANTIC SQUADRON.

The vessels composing this squadron during the year 1880 were the Shenandoah, second-rate, flagship; and the Marion and Wachusett, third-rates. The two former vessels were attached to the station during the entire year, while the Wachusett was transferred, after 182 days' service, to the Pacific station. The total strength consisted of 637 men, and corrected for time, 532.

		Per M.
The total number of cases, including those remaining from the preceding year, was	902	=1,695.39
Discharged cured	861	=1,618.33
Invalided to hospital	23	=43.23
Died	5	=9.39
Continued to the following year	13	=24.42

The daily average number of sick was, absolute, 23.33; per M, 43.70. The average duration of treatment was 9.46 days, and the total loss of service amounted to 8,538 days. As compared with the returns for 1879, the loss of time was greater by 3,380 days, and there was the large increase in the daily number of sick per M of 20.67. The invaliding-rate, however, decreased by a ratio of 10.86 per M.

Comparing the sick-rates with those of the British squadron upon this station, it will be found that in that force the ratio of sick was 1183.48 per M, or 512.01 per M less than in our squadron. The invaliding-rate was 29.35 per M, and the death-rate 11 per M. The sick-rate per M of the different ships of the squadron, arranged in numerical order, stands thus:

Shenandoah	18.27
Wachusett	14.32
Marion	11.24

The daily average loss of service was distributed in the following ratios per M among the various classes of diseases, the table showing also the ratio for 1879:

	1880.	1879.
General diseases:		
Zymotic	2.63	2.42
Constitutional	8.43	5.14
Local diseases:		
Diseases of the nervous system	2.04	.57
Diseases of the eye	1.39	.64
Diseases of the ear	.07	.54
Diseases of the teeth	.15	.05
Diseases of the circulatory system	.01	.04
Diseases of the absorbent system	1.10	.96
Diseases of the respiratory system	7.19	2.57
Diseases of the digestive system	3.66	1.46
Diseases of the genito-urinary system	4.86	2.01
Diseases of the locomotive system	.01	.78
Diseases of the integumentary system	2.63	2.14
Poisons	.23	.19
Diseases from violence	9.21	3.36

The following is the classification of the invaliding:

	Per M.
Constitutional diseases	3=5.63
Diseases of the nervous system	5=9.39
Diseases of the circulatory system	1=1.87
Diseases of the absorbent system	1=1.87

179

	Per M.
Diseases of the respiratory system	10=18.79
Diseases of the digestive system	2= 3.75
Diseases of the genito-urinary system	1= 1.87

The deaths were distributed as follows:

	M.
Zymotic diseases	3= 5.63
Diseases of the respiratory system	1= 1.87
Diseases of the digestive system	1= 1.87

The average daily loss of service was distributed among the various ships:

Name.	Actual.	Per M. of strength.
Shenandoah	9.72	18.7
Marion	5.98	11.5
Wachusett	7.62	14.2

The invaliding occurred upon the various ships as follows:

	Per M.
Shenandoah	15=28.1
Marion	7=13.1
Wachusett	1= 1.8

The deaths were distributed as follows:

Marion	4= 7.5
Wachusett	1= 1.8

GENERAL DISEASES.

These diseases were reported in about the same numbers as last year, there having been an increase of but 9 cases.

ZYMOTIC.

An aggregate of 70 cases was returned from the station, a ratio per M of 131.57, which is an increase of 11.90 per M, as compared with last year. It comprised the following cases: Febricula, 4; febris continua simplex, 11; febris flava, 25; febris intermittens, 26; febris remittens, 1; vaccina, 3.

The Marion suffered most severely, in the ratio of 59.89 per M; the Shenandoah to the extent of 50.75 per M, and the Wachusett in the smaller degree of 5.63 per M. Three deaths occurred on the Marion, while there was no invaliding upon any of the vessels. The total loss of service was 515 days. The 4 cases of febricula and the 10 cases of simple continued fever very nearly corresponded to the numbers of last year, and all were reported from the Shenandoah.

Febris flava.—An epidemic of yellow fever occurred on the Marion, in which were recorded 25 cases, a ratio of 46.99 per M. Recovery took place in 22 cases, and the remaining 3 died. The average period of treatment was 13.4 days, and the total number of sick-days amounted to 335. The following history of the epidemic by the medical officer of the ship, Surgeon H. J. Babin, is appended:

The Marion left New York in December, 1879, bound for Valparaiso, and with orders to touch at Rio de Janeiro on her way out. Her passage to Rio was accomplished in forty-eight days, and during that time nothing of any importance in a hygienic point of view was noted. The danger of visiting this port during the summer months was realized, and all possible precautions were taken to place the ship in as good a sanitary condition as circumstances would permit. Her bilges were carefully looked after, and her holds, store-rooms, &c., thoroughly cleaned and whitewashed before entering the harbor.

On our arrival at Rio, information was received from the health officer that there *existed* a few scattered cases of yellow fever in the outskirts of the city, but that the *disease* was not epidemic and there was positively no danger to the ship's company as *long* as all excesses on shore were avoided.

Notwithstanding these seemingly satisfactory assurances on the part of the health authorities, and in order to guard, as far as possible against infection, no liberty was granted the crew, and, with the exception of one day, between the hours of 9 a. m. and sunset, no officer went on shore except on duty.

The government store-house at this port is located at some distance from the city on an island, and from its situation it was supposed that the stores and provisions it supplied were not liable to be contaminated.

All vessels being required by regulation to fill up with government stores previous to leaving a port where they are kept on hand, the ship filled up to her utmost capacity with coal and paymaster's stores, and proceeded to sea without delay, having remained in the harbor of Rio de Janeiro from the 1st to the 6th of February.

Four days after leaving Rio, Michael Connolly, captain of the fore-top, was taken down with yellow fever, and on the following day Reuben E. Redding, landsman. The disease spread rapidly, and in a few days became epidemic on board ship. There were in all twenty-five cases, three of which proved fatal. This does not include the case of a stowaway, which will be alluded to presently, in speaking of the causes of the outbreak of the fever.

A synopsis of seven of these cases is given below, together with a temperature chart, &c., in each case, for the purpose of illustrating some of the prominent symptoms in the history of the disease.

Connolly reported himself sick on the morning of February 10. The disease was ushered in by a moderately severe chill, accompanied by lassitude and intense frontal headache, and followed by great elevation of temperature. Being the first case that came under observation, and his temperature falling to 102.6° in the afternoon of the same day, it was hoped that it would prove to be ordinary malarial fever.

February 11.—Temperature 103°.8; pulse remaining slow, full and regular; began to complain of sickness of stomach.

February 12.—Complained of soreness in bowels; vomited in the afternoon and evening; urine cloudy, and on examination was found to contain albumen in the proportion of one-sixth. This albuminous condition of the urine continued until the 24th, when the patient passed into convalescence.

February 13.—Complained of persistent nausea; bowels moved three times; temperature 101°; pulse 50.

February 14.—The morning temperature was 101°, but it took a sudden rise and at noon stood at 103°.2; in the afternoon it fell rapidly and the patient broke out into a profuse perspiration and commenced to bleed from the gums.

February 15.—At 5 a. m. vomited a dark brownish colored fluid (black vomit) and had three loose passages from the bowels of the same color; complained of soreness in the epigastrium and felt exhausted; breath very fetid; pulse 50, weak and compressible; conjunctivæ decidedly yellowish in color.

February 16.—At 10 a. m. temperature was 101°.2, but in the afternoon fell to 99°.4, when black vomit appeared for the second time since the onset of the disease; at 10 p. m. vomited again a large quantity of black vomit, which was followed by a feeling of exhaustion similar to that which accompanied the previous attacks of vomiting.

February 17.—Made no complaint; said he felt comfortable; temperature 97°.6; pulse 36–38.

February 18.—There was no change in the patient's condition; temperature 96°.4; pulse 40; gums have continued to bleed more or less since the 14th.

February 19.—Had no black vomit since last recorded; temperature 96°.6; pulse 36.

February 20.—Hemorrhage from gums ceased; temperature 97°.4; pulse 36.

February 21.—Temperature normal; pulse 52.

February 25.—No albumen was found in the urine.

From this time patient improved steadily to complete recovery. He remained deeply jaundiced during the first part of his convalescence.

Redding's attack occurred on the evening of February 11. He had no well-marked chill, but experienced chilly sensations, with headache and pain in back and limbs; fever soon made its appearance, the thermometer registering 103°; pulse 104.

February 12.—Face flushed; temperature 103°.4; pulse 100; complained less of pain in the back and limbs.

February 13.—Temperature 104°.6; pulse 100; urine was found to be albuminous, and remained so until the 21st, when convalescence set in. Examination of chest showed fine crackling rôles at the end of each inspiration over lower lobes of right lung, dullness of right side, and increased vocal fremitus over consolidated lung tissue. Patient was delirious all the afternoon, constantly tossing about and muttering to himself; stomach became irritable in the evening, and in attempting to vomit coughed up several times tenacious blood-stained sputa.

February 14.—Temperature 103°.3; pulse 110; respiration 28–32; very restless; peculiar flush of face somewhat less; vomited frequently, and after each attack vomited up rusty sputa.

February 15.—Complained of soreness in the epigastrium, and was quite tender on pressure over that region.

February 16.—Gums commenced to bleed, and breath became very offensive; pain and soreness in epigastrium still present, but made no complaint of lung trouble although expectoration was still rusty; conjunctivæ slightly yellowish in color.

February 17.—Mouth still showed a tendency to bleed; lips covered with herpes; tongue brown and dry.

February 18.—Considerable oozing of blood from the gums during the day; skin moist; vomited occasionally, but not black vomit, the color being yellowish green; in the evening patient had a full passage from the bowels, characteristic (black) in color, the so-called black vomit stool.

February 19.—Felt comfortable, and showed less tendency to stupor; surface of body bathed in perspiration; very weak; no expectoration and no cough.

February 20.—No hemorrhage; temperature, 97°; pulse, feeble and irregular.

February 21.—Temperature, normal; pulse, low, but stronger than on the previous day; yellowness of the skin, which had appeared some time before, remained much the same.

From this time the patient became convalescent, and was discharged to duty on the 10th of March.

Rogers was admitted to the sick-list on February 15. He was seized in the night with a chill, which was followed by pain in the head and high febrile movement. Still later on that day, temperature fell to 99°.6; vomiting came on soon after admission.

February 16.—Very restless, and at times delirious; complained of intense pain in frontal region; vomited several times; epistaxis came on in the evening and was quite profuse.

February 17.—Stupid; albumen appeared in the urine and lasted until suppression supervened; gums showed a tendency to bleed, and breath became very fetid.

February 18.—Very weak; gums bled more or less all day; vomited almost constantly in the afternoon, but vomited matter was yellowish green, and had no characteristic color.

February 19.—Suppression of urine; in the afternoon patient's temperature went down rapidly; he fell into a state of collapse, and died at 12.30 a. m., February 20.

Yellowness of the surface did not appear until immediately after death.

Lieutenant Wallis's seizure occurred on the 17th of February. He had the middle watch, and while on duty he felt chilly and exhausted: this feeling of cold and weariness continued until he turned in at 4 a. m.; he then felt drowsy, and had considerable pain in back and head; fever soon came on, and in the morning temperature was 104°; eyes were intensely congested and face flushed.

February 18.—Temperature, 104°.4; pulse, 120; restless; vomited twice, but vomit contained only what had been introduced into the stomach.

February 19.—Temperature, 104°.2; pulse, 100; vomited frequently; urine, albuminous; eyes still suffused.

February 20.—Temperature, 102°; pulse, 86; vomited almost constantly, and vomited matter which before consisted only of what had been taken into the stomach changed in character, becoming brownish in color and was soon characteristic black vomit; skin jaundiced.

February 21.—Temperature, 102°; pulse, 130; very feeble and delirious; vomited black vomit almost constantly.

February 22.—Patient sank rapidly; pulse became imperceptible at the wrist, extremities cold, body bathed in perspiration, and he died at 2.30 a. m., February 22.

Urine remained highly albuminous till death, but there was no suppression.

On the evening of February 22, Midshipman Wike was seized with headache, languor, and chilly sensations, which were followed by considerable fever during the night.

February 23.—Temperature rose to 104°.8 in the afternoon and he became very restless and delirious; face was flushed and expression of countenance anxious.

February 24.—Temperature, 104°.8; no urine was passed during the night; about a drachm was drawn off and found to be three-fourths albumen; eyes were congested, conjunctivæ discolored, and skin jaundiced; vomited frequently and bled freely from the nose.

February 25.—There was entire suppression of urine and a recurrence of the hemorrhage from the nostrils; breath became very fetid and hiccough appeared; continued delirium, and persistent vomiting, followed in the afternoon by a lower temperature and black vomit in large quantities.

February 26.—Patient passed into a state of collapse, and died at 4.15 p. m.

Logan was taken sick on February 28. He had a chill followed by pain in head and lower extremities, and high febrile movement, 104°; face was slightly flushed.

February 29. He was dull and stupid: eyes, congested; face, flushed: appearance of countenance characteristic.

March 1—Temperature, 103°; pulse, 80; remainded dull and stupid; urine examined and found to contain over 15 per cent. albumen.

March 2.—Temperature, 102°; pulse, 70; urine almost half albumen; eyes dull and heavy; skin dry and jaundiced; vomited twice.

March 3.—Temperature, 101°.2; pulse, 60; very weak; vomited almost constantly, rejecting all nourishment.

March 4.—Temperature, 100°.4; pulse, 56; brighter; perspired freely; vomiting ceased; urine, one-third albumen.

March 5.—Temperature, 99°; pulse, 68; free from all pain; said he felt well, but quite weak.

March 6.—Continued improvement.

March 7.—Urine contained much less albumen, complained only of weakness.

March 8.—Temperature, normal; pulse, 60.

March 9.—Convalescent; pulse still low, but stronger and fuller; only a trace of albumen found in the urine.

From this time convalescence progressed uninterruptedly, and he was restored to duty on the 31st of March.

The next is given as a type of one of the mild cases that came under observation during the epidemic. On March 20, Wellsman had a chill followed by severe headache and fever; face was greatly flushed and eyes somewhat suffused.

March 21.—Pain in head continued; face remained flushed.

March 22.—Sweated profusely all day; urine was cloudy from the afternoon of the 20th, but contained no albumen.

March 23.—Was free from pain; temperature, below normal.

March 24.—Looked bright and cheerful.

March 25.—Continued improvement; urine clear; no vomiting since onset of disease.

March 26.—Slight yellowness of the skin was noted.

March 27.—Convalescent.

March 31.—Discharged to duty; well.

Capillary congestion, with attendant flushing of face and tardy movement of blood in cutaneous blood-vessels, was generally observed early in the stage of excitement.

The appearance of albumen in the urine on the second or third day of the disease constituted the most significant symptom in the history of all the malignant or severe cases; it invariably preceded or accompanied the hemorrhagic tendency.

The treatment offered nothing new. Constipation was usually present at the time of the seizure, and a brisk cathartic, preferably castor oil, was exhibited. In no instance was mercury used as a purgative or otherwise. During the pyrexia resort was had to sponging the surface, light covering, and broken ice. Every means was employed to bring on gentle perspiration. Quinine seemed to act beneficially, but failed to exert any perceptible influence in lowering the temperature, even when given in large doses. The patient was kept perfectly quiet in the recumbent position, comfortably covered up, until the stage of calm had passed over, and the temperature had become normal and the urine free from albumen. Food was given cautiously, and only in such amount as could be tolerated by the stomach. Alcoholic drinks were administered in small quantities, frequently and persistently in the stage of calm or whenever the condition of the patient seemed to call for their use. In other respects the treatment was symptomatic.

In investigating the causes of the outbreak, the various avenues whereby the importation of the yellow-fever poison on board ship might have been effected may be summed up as follows: Communication with the shore, wash clothes, presence among the crew of a negro stowaway, and finally stores and fuel taken on board at Rio.

That the disease is traceable to the first and second of these causes is extremely doubtful, for no one but the officers had any communication with the shore, as above referred to, and no one besides them sent clothes on shore to be washed, and still none of them were attacked with the disease until it became epidemic on board ship.

In regard to the stowaway, it is necessary to state that on the day we left Rio, one of the slaves employed in coaling ship was missed, and although diligent search was made it proved unsuccessful. Shortly after getting under way, that same day, he was found concealed in the furnace of one of the boilers, and as soon as he was discovered the small amount of clothes that he had on his person were thrown overboard and he himself thoroughly cleansed. The fact that his own attack did not occur until eleven days after our departure from Rio, when there were already eleven cases on the sick-list, and that he was thoroughly washed and provided with new clothes before he was allowed to mix with the crew, would seem to exclude him as a medium of contagion.

We have now to consider what influence the stores and fuel may have had in causing the outbreak. The coal was brought alongside in lighters and stowed in the bunkers by native workmen, and the provisions and wood were removed from the lighters and stowed in the holds by the crew. Four days after this work of stowing was completed Connolly was attacked, and on the following day Redding. Neither of these men had been out of the ship during our stay in the harbor of Rio.

New cases developed rapidly, and in a short time the disease assumed an epidemic tendency. Of the nineteen cases of the fever among the crew, all but two had been engaged in handling and stowing the stores, and the last-mentioned two, as well as the six cases among the officers, occurred later, and can be explained on the ground of epidemic influence.

It is important to state, as bearing on the same subject, that when the holds were broken out on the 15th of March, twelve days after the admission of the last case then on the list, two of the men most concerned in the work contracted the disease in a mild form. One of these latter cases, Wellsman's, has been reported above.

As the disease thus seems to have originated among the men, and the only exposure they were subjected to was that of handling the various stores received on board, it is impossible to avoid the conclusion that the infection must have been conveyed to the ship in the provisions or fuel, or in both. From what is known of the behavior of this poison there is nothing extraordinary in arriving at such a conclusion, for constantly accumulating facts appear to establish that this is the usual way it is transported on board ships. It only seems strange that a naval depot should be maintained in Rio de Janeiro, which by common consent is considered an infected port for at least six months of the year, and against which a rigid quarantine is enforced during the same period. By recent experience and investigation it has been demonstrated that the germ of yellow fever can lie dormant for months of cold weather and still retain its vitality, and become active again whenever the attending circumstances are favorable for its development. No one conversant with the question can doubt that coal and stores kept all the year round, in a port where yellow fever prevails epidemically a great portion of the year, are liable to become infected, or believe that the lowest temperature that obtains in Rio is capable of destroying the elements of this infection, and it therefore follows that whenever such stores are received on board there is danger of infection, which needs but the occurrence of favorable conditions for its growth and spread.

Feelings of duty and humanity alike prompt me to unite with those who have already expressed their views on the subject, in recommending that the naval depot be removed to a more healthful locality, Montevideo, for instance, where exemption from all the disadvantages spoken of in connection with Rio would be secured, and where the reception of coal and stores would not be attended by such a needless source of anxiety and peril to the officers and men serving on this station.

The means adopted to check the disease and prevent its extension were landing the sick and the well, and carefully disinfecting the ship. When it became established that yellow fever was prevailing on board as an epidemic the ship proceeded at once to the nearest port (Montevideo) and entered quarantine at Flores Island on the 19th of February. A detached portion of the island, known as Third Island, was assigned to our exclusive use by the quarantine authorities, and all hands, except those required as ship-keepers, were transferred on shore without delay. The work of fumigating and cleaning the ship was commenced on February 26, when the hatches were battened down and the berth-deck, holds, and coal-bunkers fumigated with chlorine-gas generated from chloride of lime and dilute sulphuric acid in pans, and distributed in various parts of the ship. This was continued until the 13th of March. In the mean time the bilges were frequently flushed with water, pumped dry, and afterward disinfected with a solution of copperas.

From the 13th to the 15th of March all the wind-sails were set, and the berth-deck and holds thoroughly ventilated. On the 15th of March it was considered comparatively safe to commence breaking out the holds and store-rooms. A working party was detailed twice daily, and none of the men were allowed to remain below more than an hour at a time. After this had been done, March 17, the hatches were again battened down and the ship fumigated with sulphurous-acid gas by burning 45 pounds of sulphur in iron pots placed in the wardroom, steerage, berth-deck, sick-bay, forepassage, fore-hold, engine-room, and shaft-alley. All the store-rooms, lockers, and drawers were opened, so that the gas might penetrate to the most remote parts of ship. On the 18th of March and the following two days, the holds and bilges were carefully scraped, cleaned, and whitewashed, and the paint-work in the wardroom, steerage, and berth-deck was washed with carbolized water. The bunks, drawers, and lockers in the rooms of the officers who had been affected were taken out and thoroughly cleaned and painted. The beef and pork barrels were placed on the spar-deck, the bark scraped off the hoops, and then the barrels were whitewashed. The provision boxes were washed with carbolized water, and the provisions in bags exposed to the winds and sprinkled with a solution of carbolic acid. The soiled clothes were washed in a like solution, and the bedding and clothing aired in the rigging whenever the weather permitted.

On the 20th of March, after the thorough cleansing of the berth-deck, steerage, wardroom, and holds above alluded to, the ship was again fumigated, by burning 80 pounds of sulphur in the various localities above mentioned. The cabin was also *disinfected* with sulphurous oxide. During the following two weeks the sick-bay and

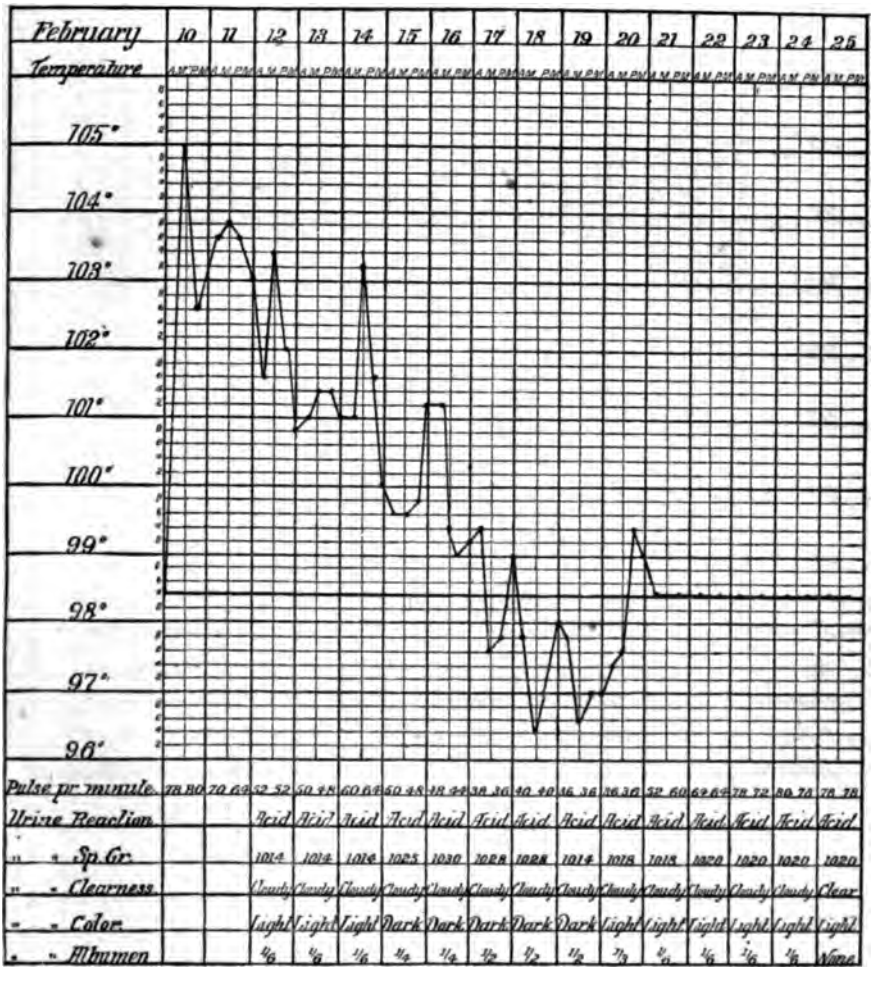
berth-deck received two coats of paint and the wardroom one. All the fuel taken on board at Rio was thrown overboard, and what remained of the stores received from the same quarter was subsequently thrown overboard or otherwise destroyed.

On the 6th and 7th of April the officers and men broke up camp on Flores Island and returned on board.

Over nine months have elapsed since the disinfection above detailed has been completed, and the ship has remained entirely free from the malady. If, as we have reason to believe, such sanitary measures are sufficient, the Marion ought to escape any further outbreak. But with past experience as a guide, notably the Plymouth's case, her passage through the tropics will be the test; if the ship reaches a northern port without a reappearance of the infection it will then be safe to conclude that the germs of the disease have been eradicated.

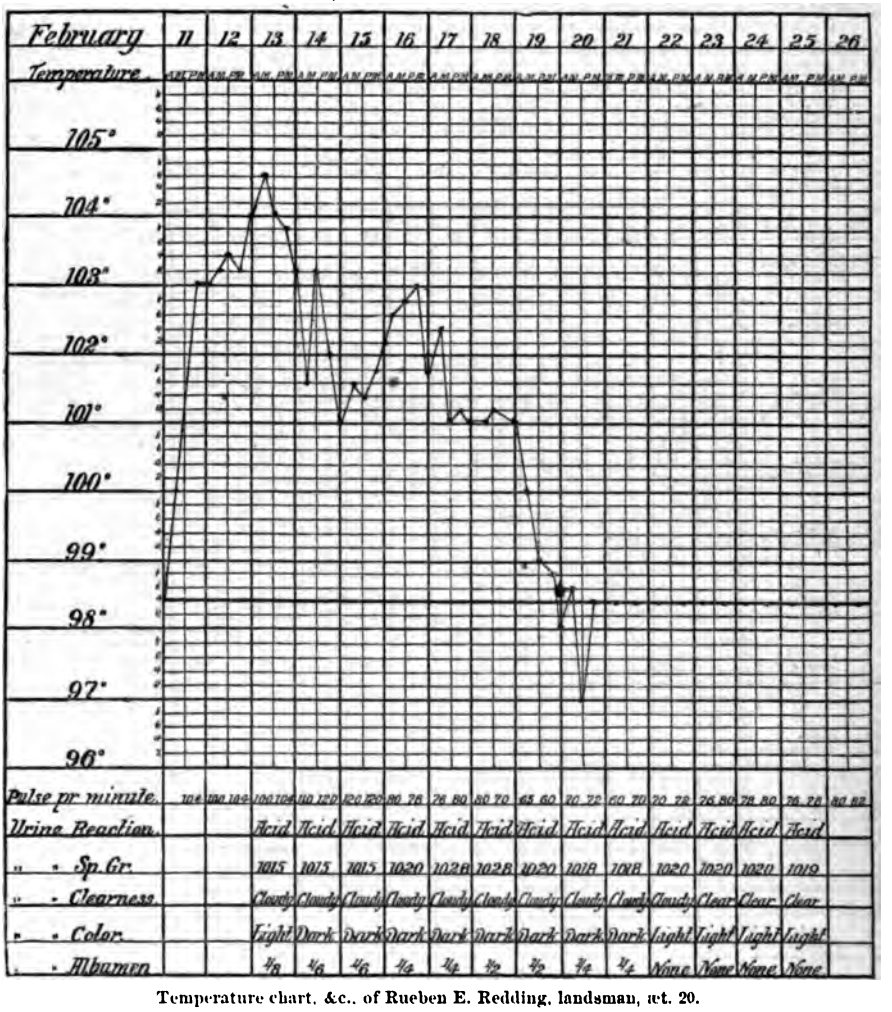
Under the circumstances it seems but right that the length of time to which there shall be exposure to a tropical heat should be reduced to a minimum. By taking her departure from this station for the United States during the month of October the ship will have the advantage of cool weather until she enters the tropics south, and will again derive the same advantage of weather immediately on leaving the tropics north. I would respectfully recommend that such a course be adopted.

CASE 1.—*Yellow fever; albuminous urine; hæmorrhages; black vomit; recovery.*



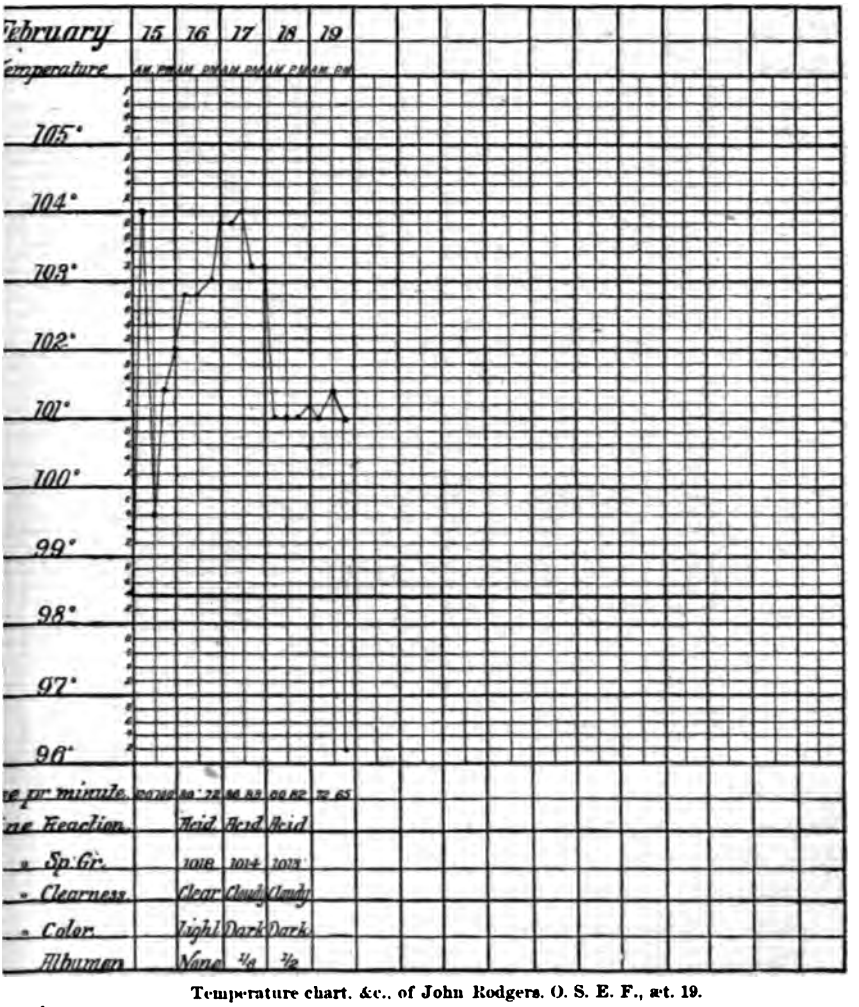
Temperature chart, &c., of Michael Connolly, &c., c. f. t., æt. 24.

CASE 2.—*Yellow fever; albuminous urine; pneumonic complications; hemorrhage; recovery.*



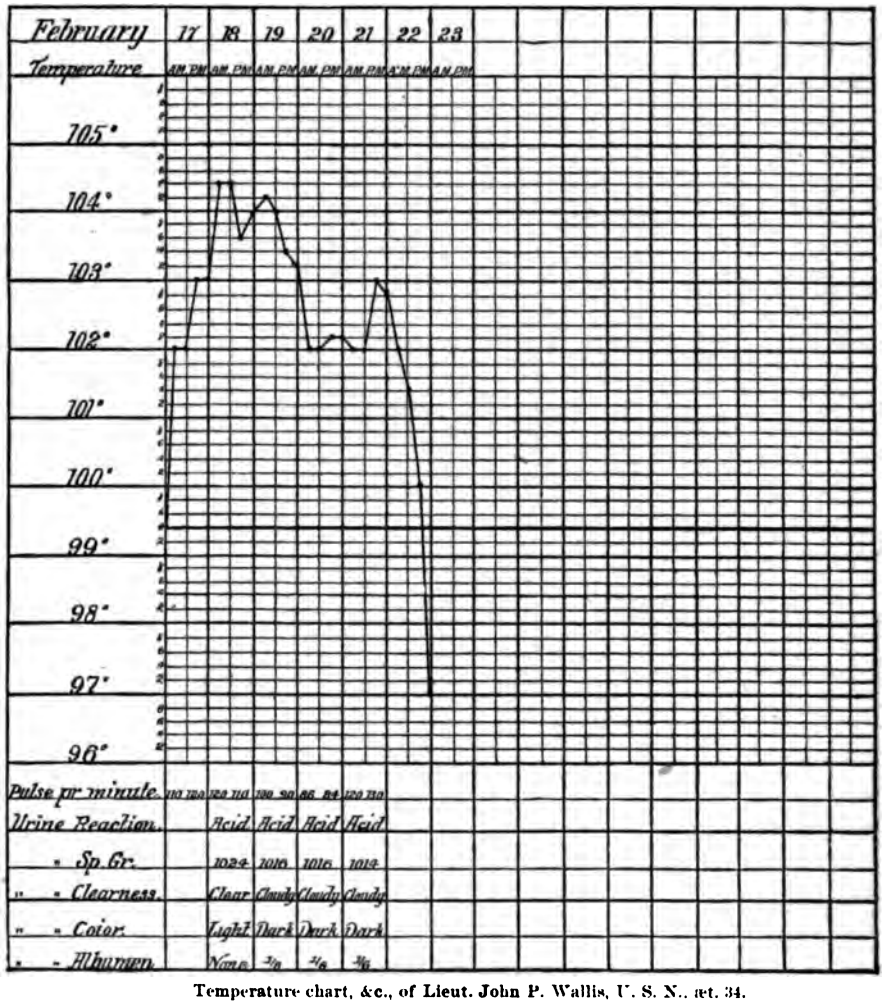
Temperature chart, &c., of Rueben E. Redding, landsman, æt. 20.

CASE 3.—*Yellow fever; albuminous urine; hemorrhages; suppression of urine; death.*



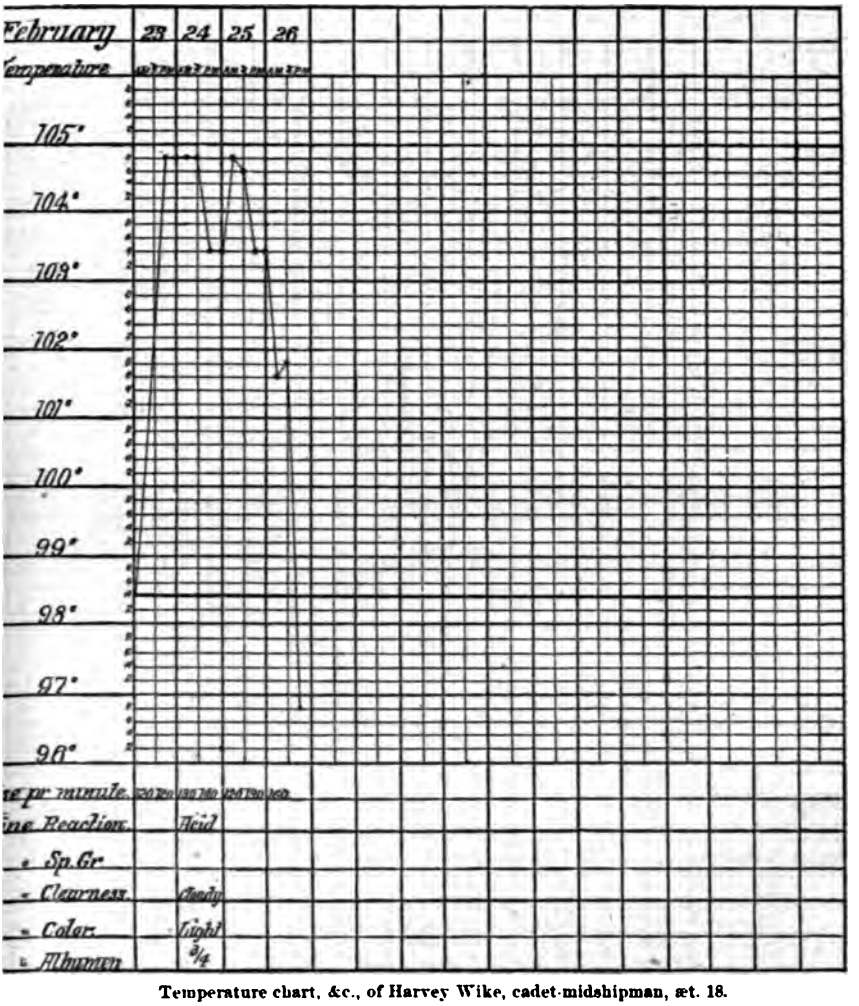
Temperature chart, &c., of John Rodgers, O. S. E. F., æt. 19.

CASE 4.—*Yellow fever; albuminous urine; hemorrhages (black vomit); death.*



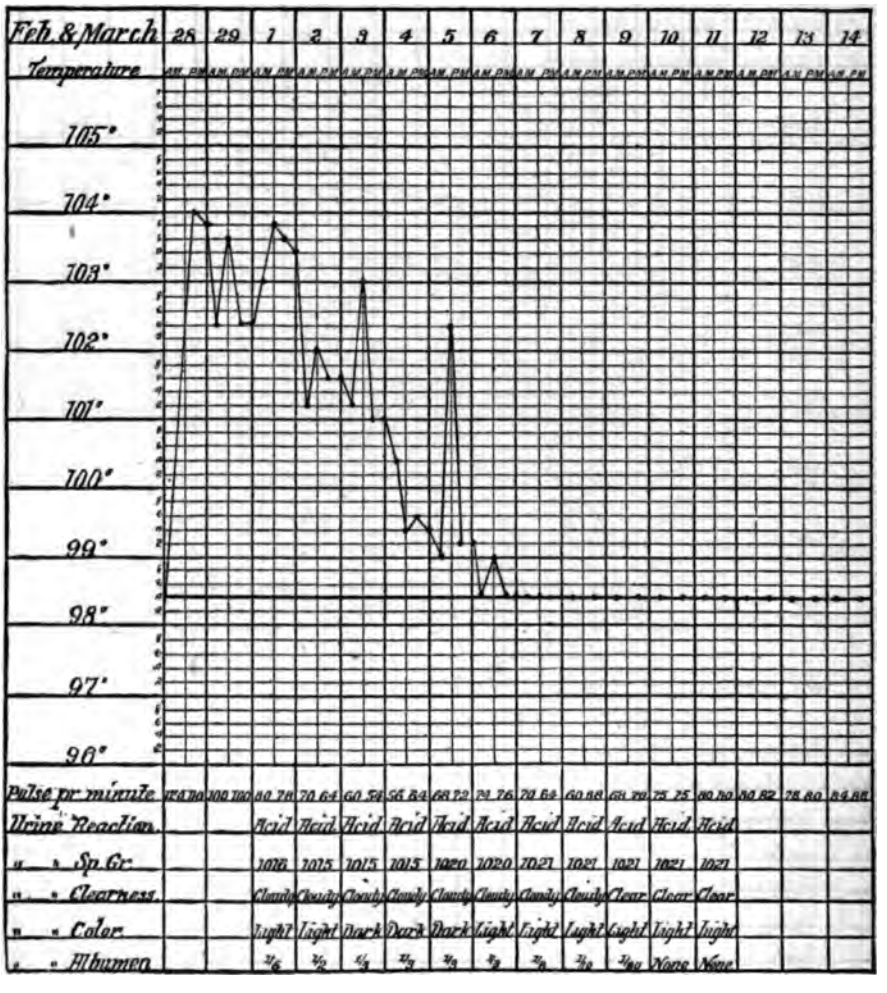
Temperature chart, &c., of Lieut. John P. Wallis, U. S. N., æt. 34.

CASE 5.—*Yellow fever; albuminous urine; hemorrhages; suppression; black vomit; death.*



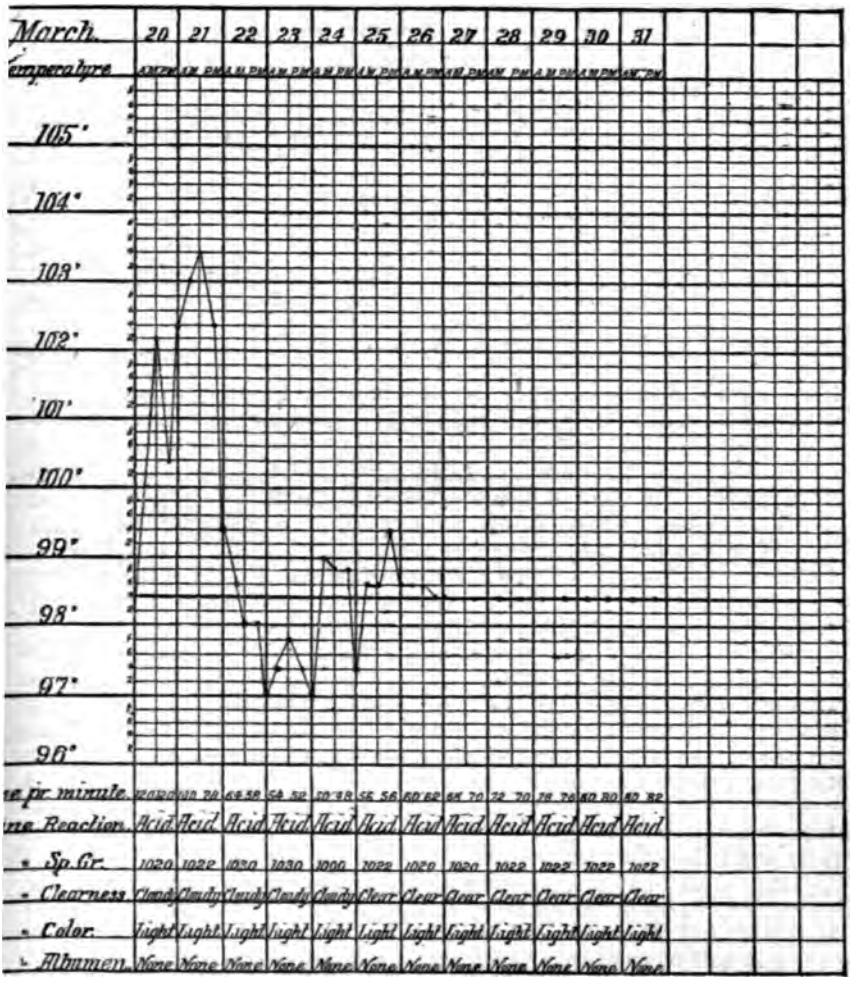
Temperature chart, &c., of Harvey Wike, cadet-midshipman, æt. 18.

CASE 6.—*Yellow fever; albuminous urine; recovery.*



Temperature chart, &c., of James Logan, O. C. F., æt. 18.

CASE 7.—*Yellow fever; recovery.*



Temperature chart, &c., of Herbert Wellsman, ordinary seaman, æt 19.

Febris intermittens.—Twenty-six cases of intermittent fever appeared during the year, making the ratio of 48.87 per M, which is smaller than that of last year by 20 per M. The cases were not severe, all recovering after an average period of treatment of four days. They were distributed as follows: Shenandoah, 10; Marion, 14; Wachusett, 2.

Vaccina.—Two cases on the Shenandoah and 1 on the Wachusett were entered on the sick-list from this cause. The number of vaccinations are small, as recorded:

Ships.	Presenting evidence of small-pox.		Presenting evidence of previous vaccination.		No evidence of vaccination.		Total.
	Successful.	Unsuccessful.	Successful.	Unsuccessful.	Successful.	Unsuccessful.	
Shenandoah	0	0	0	0	10	35	45
Wachusett	0	0	2	3	1	1	7
Total	0	0	2	3	11	36	52
Per cent. of cases	0.		9.6		90.4		.....
Per cent. of successful	0.		40.		23.4		25.0

CONSTITUTIONAL DISEASES.

The number of admissions under this head amounted to 100, giving a ratio of 187.96, which exceeds that of last year to the extent of 43.80 per M. The invaliding which occurred was 3 cases, or 5.63 per M; and the loss of service amounted to 1,646 days, which is nearly 500 more than in 1879. The ratio of these affections which were reported from the various ships is expressed as follows: Marion, 18.79; Shenandoah, 76.80; Wachusett, 77.03.

Adynamia.—The ratio of this affection was about that of 1879, there being a reduction of .2 per M from that of last year, when it was 11.47. All the cases were reported from the Shenandoah.

Rheumatism.—Sixty-one cases in all of rheumatism were returned, 36 of the acute and 25 of the chronic forms, giving a ratio per M. in the former case of 67.66, and in the latter of 46.99. All were returned to duty after an average period of treatment of 7.70 days of acute rheumatism, and 27.71 of the chronic form of the disease. Compared with the previous years, there was an increase of 18.48 per M. of the acute affection, and of 19.13 per M of the chronic. All the cases of acute rheumatism were reported from the Shenandoah, and all of the chronic variety from the other two ships.

Syphilis.—But 7 cases of primary syphilis presented themselves, while there were 22 cases of secondary, making a ratio in the former case of 13.15 per M, and of 41.35 in the latter. Comparing these with the ratios for 1879, it will be seen that there was a reduction of 4.88 per M of primary syphilis, and an increase of 21.68 per M of the secondary. The total loss of service from syphilis was 549 days, and all were returned to duty. Twenty-one cases were reported from the Wachusett, and 4 each from the Marion and Shenandoah.

LOCAL DISEASES.

There was a very large increase in the number of the affections falling within this division. Last year there were reported 475 cases, and during

the present 732, so that the increase has been 257 cases. The principal increase occurred in the classes of respiratory and digestive diseases, and largely among the diseases from violence. The genito-urinary diseases increased in a smaller ratio, while there were reductions in those of the nervous, circulatory, and locomotive systems.

DISEASES OF THE NERVOUS SYSTEM

Forty-three cases were entered under this head, making a ratio of 80.82 per M, a reduction from the preceding year of 2.80 per M. Five cases, in the ratio of 9.39 per M, were invalided, and the total loss of service was 399 days. The largest factor of the class was cephalalgia, of which there were 17 cases, and the following made up the remainder: Epilepsy 2, sunstroke 1, melancholia 3, sea-sickness 4, neuralgia 10, paralysis 2, pleurodynia 4. The cases were divided among the ships in about equal ratios.

DISEASES OF THE EYE.

Fourteen cases make up the total of this class, as follows: Conjunctivitis 6, hordeolum 2, ophthalmia 2, retinæ congestio 3, and ulcus corneæ 1.

The ratio per M given by these numbers was 26.31, an increase of 1.72 per M as compared with last year. The average duration of treatment was 19.42 days, and the total loss of service was 272 days. There was no invaliding. Singularly, no cases were reported from the Shenandoah, and but 2 from the Marion, so that the Wachusett contributed nearly all.

DISEASES OF THE EAR.

One case of otorrhœa was returned from the Shenandoah, and one case each of otitis and deafness from the Wachusett, which make up the total of the class.

DISEASES OF THE CIRCULATORY SYSTEM.

The Shenandoah reported a case of angina pectoris, and the Marion 1 of palpitatio, a ratio of 3.75 per M, which is smaller by 1.16 per M than that of 1879.

DISEASES OF THE RESPIRATORY SYSTEM.

One hundred and twenty-five cases were returned under this head, giving a ratio of 235.95 per M, an increase, compared with that of the preceding year, of 101.53 per M. Ten cases were invalided, all to hospital, a ratio of 18.79 per M, which is nearly 10 per M greater than last year. There was 1 death. The loss of service was 1,402 days, an average of 11.21 per man. The nature of the cases was as follows: Asthma 3, bronchitis 9, catarrhus 69, laryngitis 12, phthisis pneumonica 8, pleuritis 24. The Wachusett reported the largest number of cases, 55, while the remaining 70 were equally contributed by the Marion and Wachusett. The cases of bronchitis numbered only one-third that of 1879, while those of catarrh doubled the number of that year. There were four times as many cases of pthisis as were reported last year, while the ratio furnished by the 24 cases of pleuritis exceeded that of 1879 by 18.56 per M. The single death resulting from pthisis pneumonica chronica occurred on board the Wachusett.

DISEASES OF THE DIGESTIVE SYSTEM.

One hundred and seventy-one cases make up the total of this class, contributing a ratio of 321.31 per M, which indicates an increase of 190.17 per M, as compared with the previous year, or more than double. The increase is noticeable pretty generally throughout the class, but is most marked among the choleraic and diarrhœal troubles. The average length of treatment was 4.19 days, and the total loss of time 717 days. The vessels of the squadron suffered from these affections in the proportions expressed by the following ratios: Shenandoah, 150.37; Wachusett, 122.17; Marion, 48.87. The most interesting case of the class was one of strangulated hernia, which is reported as follows by Assistant Surgeon C. W. Rush, of the Marion:

Charles Green, armorer, U. S. N., native of Sweden; aged 42 years; shipped at St. Paul de Loanda, Africa, December 12, 1877; admitted April 30, 1880; strangulated hernia (internal). Origin in the line of duty, the facts being as follows, viz:

On turning out this morning patient had slight colicky pains in the abdomen, which he considered due to constipation, no movement from the bowels having taken place for two days. While at general quarters he exerted himself in lifting and handling a 3-inch rifle, and immediately after this exertion complained of increased pain. A dose of ol. ricini ℥iss and tr. opii gtt. x was given, and at his own request he was allowed to attend to his duties; he vomited the oil shortly after taking it. In the afternoon a second dose was ordered, and no movement following, an enema of soap and water, with magnes. sulph. ℥iij, was administered. This was discharged in a few minutes, but contained no fecal matter. The pain in his bowels still being present, sinapisms were ordered, and Magendie's solution of morphia ♏x administered hypodermically. At 4 a. m., May 1, his condition was much more alarming. His abdomen was greatly distended and tympanitic, his pain intense, respiration greatly interfered with, and expression of countenance extremely anxious. This condition of distention of the abdomen was quite rapid and general. His temperature was normal, pulse 130 per minute. A second dose of morphia was administered to relieve pain, stupes were applied over the abdomen, and another enema given. At 9 a. m. patient was in a condition of exhaustion, pain not so severe, distention of abdomen unchanged, temperature 99½, pulse 160, very feeble and irregular. The finger having been already passed into the rectum to remove any obstruction that might exist, and none being detected it was decided to inject into the bowel as much fluid as could be retained. Six ounces were injected, but with its expulsion came no fecal matter. The hand was then passed into the rectum, in order to locate or remove the obstruction. The abdomen being greatly distended and unyielding, no tumor could be detected by external manipulation. On entering the gut no obstruction was found in the rectum; its walls were smooth, and its cavity normally capacious. Passing the finger upwards and towards the left side, at the commencement of the sigmoid flexure resistance was encountered, and the gut seemed to be surrounded by a tendinous ring—such was the feel. By gentle but steady pressure the finger could be inserted further into the gut, and followed a direction downwards and forwards. As soon as the finger was withdrawn the opening closed tightly, and the rectum seemed converted into a pouch. A catheter attached to a Davidson's syringe was carried up along the finger and inserted a short distance, one-fourth inch beyond the constriction above referred to, but no fluid could be made to pass into the gut beyond. From the information gained by this examination it was decided that the intestine was obstructed, either by a twist of the gut upon itself or by a tendinous band stretched across it, and the sigmoid flexure was regarded as the seat of said obstruction. Patient's condition was rapidly getting worse; respirations were increased to 48 per minute, and pulse was scarcely perceptible; temperature was below normal, and the distension of the abdomen not diminished. Under such circumstances it was decided that an operation for the relief of the obstruction would not be advisable, and therefore morphia and stimulants constituted the only treatment. He rapidly passed into a state of collapse, became delirious, and died at 11.30 p. m., May 1, 1880.

Autopsy.—Rigor mortis present, but not well marked; superficial congestion of posterior surface of the body; abdomen greatly distended, and its integument slightly discolored. Upon opening the abdominal cavity a large quantity of fetid gas made its escape, and the intestines were observed to be greatly distended and intensely congested. The descending colon was found a little to the right of the median line, and *the transverse* colon displaced downwards and to the right. Upon tracing down the *descending* colon the sigmoid flexure was found to be constricted, and beyond the *constriction* was a pouch of the gut an inch and a half in length, distended with gas *and of* very dark color. This constriction was found to be due to a fissure in the *mesentery*, through which a portion of the sigmoid flexure had slipped, and from the *constant* accumulation of gas the pouch or sac of gut had become more and more

tended, and the constriction tighter. The constricting band spoken of in the history of the case was found to be due to the edges of the fissure above referred to. The accumulation of gas in the gut above the constriction, after distending the hernial sac, caused the colon to be displaced and become twisted upon itself, thus forming a double obstruction. A few bands of fibrous tissue, evidently the result of an old peritonitis, were found on the right side, but they were slight and could be easily ruptured.

The case above cited presents many points of interest, not only as to the diseased condition supposed to exist, and its verification by post-mortem examination, but also as to the cause of the hernia and the question of its treatment. The intense pain, the distension of the abdomen and the fact that constipation existed, pointed to obstruction in some portion of the intestinal tract as the probable cause.

The age of the patient, the presence of general, and not localized pain, the non-discovery of a tumor by external manipulation and the absence of fecal vomiting, seemed sufficient to eliminate intussusception. That the occlusion of the gut was not due to chronic stricture, such as might be caused by malignant disease or pressure of a tumor, was inferred from the history of the case, and the sudden onset of alarming symptoms. The result of examination through the rectum, however, settled the fact that the large intestine was the seat of the obstruction, and that this obstruction was of recent origin, and that it was complete, for nothing could be made to pass above the sigmoid flexure.

It will be remembered that, on autopsy, a fissure in the mesentery was found to be the cause of the constriction, and this had evidently existed for a long period. The immediate or exciting cause of the hernia was undoubtedly constipation.

The sigmoid flexure is but loosely connected to the abdominal wall and lies in relation in front, with the small intestines and mesentery, and the presence of this fissure would render the gut liable at any time to become constricted, or if a small pouch or fold of the intestine once found entrance the accumulation of gas, or any sudden exertion by the patient, such as lifting or straining, would tend to increase the size of the constricted portion or to render the constriction tighter. Constipation would increase this tendency, and when once constricted, the escape of constantly accumulating gas being cut off by the diminished caliber of the gut, that portion above the constriction must necessarily become distended. Such was the case in the present instance, and the distension was so great as to displace the gut and cause it to become twisted upon itself, thus forming a double obstruction. That the exertion of the patient in lifting, while at quarters, favored the occurrence of the hernia, there is but little doubt. The question of treatment, in case of intestinal obstruction, is an important one, and cannot be hastily decided, especially when a positive diagnosis cannot be made. It is evident that internal remedies, such as calomel, which has been recommended in similar cases, would have been worse than useless in the present instance, and the only possible relief that could have been offered consisted in an operation for the relief of the stricture. To a certain extent statistics must always influence the surgeon in undertaking an operation, but the main points to be considered are the condition of the patient and his ability to resist the shock that necessarily follows. Particularly is this true where the abdomen is the seat of operation. In the present case there were several elements which counter-indicated operative interference, viz, the rapid development and constant increase in the severity of the abdominal symptoms, the rapidity and feebleness of the pulse, the acceleration of respiration, and the general condition of exhaustion which soon became manifest. With pulse scarcely perceptible, and respirations 48 per minute, an operation so extensive and so full of risk as opening into the abdominal cavity could scarcely be recommended; and the only resource was to relieve pain by the free administration of morphia. As the autopsy showed, even had an operation been performed, there is little question of its fatal termination, for the hernial sac was of very dark color, and would undoubtedly have become gangrenous.

DISEASES OF THE GENITO-URINARY SYSTEM.

Under this head 50 cases were noted, giving a ratio of 93.98 per M, showing an increase of 43.17 per M over that of 1879. The Wachusett contributed the greatest number, 26, in the ratio of 48.87 per M; the Shenandoah reported 17, or 31.95 per M; and the Marion 6, or 11.27 per M. The only case invalided was one of albuminuria, which occurred on the Marion. There were but 2 cases of chancroids, and these were reported from the Shenandoah. Of gonorrhœa, 29 cases were tabulated, giving a ratio of 54.50 per M, or 39.75 per M. greater than in 1879, and causing a loss of 649 days' service. Three-fourths of these cases occurred on the Wachusett. The five cases which happened on the Shenandoah seem all to have been followed by cystitis, and there were, besides, 2

cases of this affection on the Marion and Wachusett, respectively. But 1 case of urethral stricture was reported.

DISEASES OF THE LOCOMOTIVE SYSTEM.

There was a very considerable reduction in this class, the number of admissions falling from 10, in 1879, to 2, in 1880, the ratios for the 2 years being 16.39 and 3.75 per M, respectively.

DISEASES OF THE INTEGUMENTARY SYSTEM.

Seventy-one cases of skin diseases were returned, the ratio per M being 133.45, an increase from last year of 27.54. The various diseases were reported in about the usual proportion, and the loss of service was 514 days, an increase of 34 over that of last year.

Poisons.—Nineteen cases of alcoholism were returned, which makes a ratio of 35.71 per M, nearly double that of last year, although the loss of service was very nearly that for the previous year. The Wachusett admitted 10 cases, the Shenandoah 8, and the Marion but 1.

VIOLENT DISEASES.

This class of diseases contributed 216 cases, a ratio of 405.99 per M, an increase of 225.67 per M over that of last year, or more than double the number. The total loss of service was 1,795 days, while last year it was but 756, and the average duration of treatment increased from 6.8 days in 1879 to 8.31 days in 1880. The largest number of cases was contributed by the Shenandoah, which reported 135, while the Wachusett returned 41, and the Marion 40.

TABLE I.—*Showing the force on each ship, the number admitted and discharged, number of days under treatment, and average per M of force on the South Atlantic Station.*

Vessels.	Strength.	Strength corrected for time.	Admitted. From last year.	Admitted. First quarter.	Admitted. Second quarter.	Admitted. Third quarter.	Admitted. Fourth quarter.	Admitted. Total.
Marion, 3d rate, 910 tons, wood, screw; service, 366 days	194	194	4	75	55	41	18	193
Shenandoah, 2d rate, 929 tons, wood, screw; service, 366 days	238	238	3	143	70	106	91	413
Wachusett, 3d rate, 695 tons, wood, screw; service, 182 days	205	100	9	150	137	.....	.....	296
Aggregate	637	532	16	368	262	147	109	902

Vessels.	Discharged. Invalided. To hospital.	Invalided. From service.	Died.	Total.	Cured.	Continued.	Number of sick days.	Average number of days under treatment.	Daily average number sick. Absolute.	Daily average number sick. Per M of strength.	Number admitted per M of strength.
Marion, 3d rate, 910 tons, wood, screw; service, 366 days	7	....	4	190	179	3	2,191	11.35	5.98	11.24	362.7
Shenandoah, 2d rate, 929 tons, wood, screw; service, 366 days	15	.....	.....	403	388	10	3,558	8.61	9.72	18.27	776.2
Wachusett, 3d rate, 695 tons, wood, screw; service, 182 days	1	....	1	296	294	....	2,789	9.42	7.62	14.32	554.9
Aggregate	23	....	5	889	861	13	8,538	9.46	23.32	43.83	1,693.8

TABLE II.—*Showing the number of cases, the discharged, the invalided and dead for each disease, and their ratio per M of force on the South Atlantic Station.*

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Remaining.
									To hospital.		From service.				
	Number.	Per 1,000 of force.		Absolute.	Per 1,000 of force.		Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	
GENERAL DISEASES.															
1.—*Zymotic diseases.*															
Febrichla	4	7.51	11	.03	.05	2.75	4	7.51	.....	.....	.....	.....	.....	.....	.....
Febris continua simplex	11	20.67	43	.11	.20	3.90	11	20.67	.....	.....	.....	.....	.....	.....	.....
Febris flava	25	46.99	335	.91	1.71	13.4	22	41.35	.....	.....	.....	.....	3	5.63	.....
Febris intermittens	26	48.87	117	.31	.57	4.5	26	48.87	.....	.....	.....	.....	.....	.....	.....
Febris remittens	1	1.87	1	.....	.....	1	1	1.87	.....	.....	.....	.....	.....	.....	.....
Vaccina	3	5.63	8	.02	.03	2.66	3	5.63	.....	.....	.....	.....	.....	.....	.....
Total	70	131.57	515	1.40	2.63	7.35	67	125.9	.....	.....	.....	.....	3	5.63	.....
2.—*Constitutional diseases.*															
Adynamia	6	11.27	480	1.31	2.46	80	4	7.51	2	3.75	.....	.....	.....	.....	.....
Diabetes	2	3.75	117	.31	.57	58.5	1	1.87	1	1.87	.....	.....	.....	.....	.....
Podagra	2	3.75	5	.01	.01	2.5	2	3.75	.....	.....	.....	.....	.....	.....	.....
Rheumatismus acutus	36	67.66	302	.82	1.54	8.4	33	62.02	.....	.....	.....	.....	.....	.....	3
Rheumatismus chronicus	25	46.99	193	.52	.97	7.70	25	46.99	.....	.....	.....	.....	.....	.....	.....
Syphilis primitiva	7	13.15	194	.53	.99	27.71	7	13.15	.....	.....	.....	.....	.....	.....	.....
Syphilis consecutiva	22	41.35	355	.96	1.80	16 13	22	41.35	.....	.....	.....	.....	.....	.....	.....
Total	100	187.96	1,646	4.49	8.43	16.46	94	176.68	3	5.63	.....	.....	.....	.....	3
LOCAL DISEASES.															
1.—*Diseases of the nervous system.*															
Cephalalgia	17	31.95	31	.08	.15	1.82	17	31.95	.....	.....	.....	.....	.....	.....	.....
Epilepsia	2	3.75	77	.21	.39	38.5	1	1.87	1	1.87	.....	.....	.....	.....	.....
Insolatio	1	1.87	16	.04	.07	16	1	1.87	.....	.....	.....	.....	.....	.....	.....
Melancholia	3	5.63	134	.36	.67	44.66	1	1.87	2	3.75	.....	.....	.....	.....	.....

TABLE II.—*Showing the number of cases, the discharged, the invalided and dead for each disease, &c.*—Continued.

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Remaining.
									To hospital.		From service.				
	Number.	Per 1,000 of force.		Absolute.	Per 1,000 of force.		Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	
LOCAL DISEASES.															
1.—*Diseases of the nervous system*—Continued.															
Nausea marina	4	7.51	9	.02	.03	2.25	4	7.51							
Neuralgia	10	18.79	63	.17	.31	6.3	10	18.79							
Paralysis	2	3.75	53	.14	.26	26.5			2	3.75					
Pleurodynia	4	7.51	16	.04	.07	4	4	7.51							
Total	43	80.82	399	1.09	2.04	9.27	38	41.34	5	9.39					
2.—*Diseases of the eye.*															
Conjunctivitis	6	11.27	85	.23	.43	14.16	6	11.27							
Hordeolum	2	3.75	12	.03	.05	6	2	3.75							
Ophthalmia	2	3.75	15	.04	.07	7.5	2	3.75							
Retinæ congestio	3	5.63	153	.41	.77	51	3	5.63							
Ulcus corneæ	1	1.87	7	.01	.01	7	1	1.87							
Total	14	26.31	272	.74	1.39	19.42	14	26.31							
3.—*Diseases of the ear.*															
Otitis	1	1.87	6	.01	.01	6	1	1.87							
Otorrhœa	1	1.87	3			3	1	1.87							
Sarditas	1	1.87	8	.02	.03	8	1	1.87							
Total	3	5.63	17	.04	.07	5.66	3	5.63							
4.—*Diseases of the teeth.*															
Odontalgia	5	9.39	6	.01	.01	1.2	5	9.39							
Parulis	1	1.87	26	.07	.13	26	1	1.87							
Total	6	11.27	32	.08	.15	5.33	6	11.27							

5.—*Diseases of the circulatory system.*															
Angina pectoris	1	1.87	2			2			1	1.87					
Palpitatio	1	1.87	2			2	1	1.87							
Total	2	3.75	4	.01	.01	2	1	1.87	1	1.87					
6.—*Diseases of the absorbent system.*															
Adenitis	10	18.79	219	.59	1.10	21.9	9	16.91	1	1.87					
Total	10	18.79	219	.59	1.10	21.9	9	16.91	1	1.87					
7.—*Diseases of the respiratory system.*															
Asthma	3	5.63	137	.37	.69	45.66	3	5.63							
Bronchitis acuta	2	3.75	11	.03	.05	5.5	2	3.75							
Bronchitis chronica	7	13.15	171	.46	.86	24.42	7	13.15							
Catarrhus	69	129.69	275	.75	1.40	3.98	69	129.69							
Laryngitis	12	22.55	43	.11	.20	3.5	12	22.55							
Phthisis pneumonica acuta	3	5.63	22	.06	.11	7.33			3	5.63					
Phthisis pneumonica chronica	5	9.39	210	.57	1.07	42	1	1.87	2	3.75			1	1.87	1
Pleuritis	24	45.11	534	1.45	2.72	22.25	16	30.07	5	9.39					3
Total	125	235.95	1,402	3.83	7.19	11.21	110	206.75	10	18.79			1	1.87	4
8.—*Diseases of the digestive system.*															
Cholera morbus	18	33.83	52	.14	.26	2.88	18	33.83							
Colica	35	65.78	89	.24	.45	2.54	35	65.78							
Constipatio	1	1.87	1			1	1	1.87							
Diarrhœa acuta	65	122.17	184	.50	.93	2.83	64	120.30							1
Diarrhœa chronica	7	13.15	41	.11	.20	5.85	7	13.15							
Dysenteria acuta	7	13.15	108	.29	.54	15.42	7	13.15							
Dyspepsia	3	5.63	8	.02	.03	2.66	3	5.63							
Gastritis	1	1.87	3			3	1	1.87							
Gastrodynia	1	1.87	1			1	1	1.87							
Hæmorrhois	12	22.55	176	.48	.90	14.66	9	16.91	2	3.75					1
Hernia	3	5.63	6	.01	.01	2	2	3.75					1	1.87	
Pharyngitis	1	1.87	1			1	1	1.87							
Rhagades ani	2	3.75	8	.02	.03	4	2	3.75							
Tonsillitis	15	28.19	39	.10	.18	2.6	15	28.19							
Total	171	321.31	717	1.95	3.66	4.19	166	312.01	2	3.75			1	1.87	2
9.—*Diseases of the genito-urinary system.*															
Albuminuria	1	1.87	32	.08	.15	32			1	1.87					
Chancroides	2	3.75	25	.06	.11	12.5	2	3.75							
Cystitis	4	7.51	53	.14	.26	13.25	4	7.51							
Gonorrhœa	29	54.50	649	1.77	3.32	22.38	29	54.50							
Orchitis	9	16.91	84	.22	.41	9.33	9	16.91							

TABLE II.—*Showing the number of cases, the discharged, the invalided and dead for each disease, &c.*—Continued.

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Remarks.
									To hospital.		From service.				
	Number.	Per 1,000 of force.		Absolute.	Per 1,000 of force.		Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	
LOCAL DISEASES—Continued.															
Diseases of the genito-urinary system—Continued.															
Spermatorrhœa	3	5.63	27	.07	.13	9	3	5.63							
Urethræ strictura	1	1.87	76	.20	.37	76	1	1.87							
Varicocele	1	1.87	2			2	1	1.87							
Total	50	93.98	948	2.59	4.86	18.96	49	76.80	1	1.87					
10.—*Diseases of the locomotive system.*															
Bunion	1	1.87	3			3	1	1.87							
Periostitis	1	1.87	4	.01	.01	4	1	1.87							
Total	2	3.75	7	.01	.01	3.5	2	3.75							
11.—*Diseases of the integumentary system.*															
Abscessus	10	18.79	62	.16	.30	6.2	10	18.79							
Acne	1	1.87	5	.01	.01	5	1	1.87							
Anthrax	1	1.87	17	.04	.07	17	1	1.87							
Cellulitis	4	7.51	24	.06	.11	6	4	7.51							
Ecthyma	2	3.75	8	.02	.03	4	2	3.75							
Eczema	4	7.51	42	.11	.20	10.5	4	7.51							
Furunculus	30	56.38	163	.44	.82	5.43	28	52.62							2
Herpes	4	7.51	72	.19	.35	18	4	7.51							
Onychia	2	3.75	7	.01	.01	3.5	2	3.75							
Paronychia	6	11.27	33	.09	.16	5.5	5	9.39							1
Tinea	3	5.63	37	.10	.18	12.33	3	5.63							
Unguis involutus	1	1.87	2			2	1	1.87							
Ulcus	3	5.63	42	.11	.20	14	3	5.63							

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TABLE II.—*Showing the number of cases, the discharged, the invalided and dead for each disease, &c.*—Continued.

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		
									To hospital.		From service.				
	Number.	Per 1,000 of force.		Absolute.	Per 1,000 of force.		Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Remaining.
ON SHORE.															
1. *Diseases of the nervous system*—Continued.															
Nervous exhaustion	4	7.51	9	.02	.03	2.25	4	7.51							
Neuralgia	10	18.79	63	.17	.31	6.3	10	18.79							
Paralysis	2	3.75	53	.14	.26	26.5			2	3.75					
Rheumatism	4	7.51	16	.04	.07	4	4	7.51							
Total	43	80.82	309	1.09	2.04	9.27	38	41.34	5	9.39					
2. *Diseases of the eye.*															
Conjunctivitis	6	11.27	85	.23	.43	14.16	6	11.27							
Hordeolum	2	3.75	12	.03	.05	6	2	3.75							
Ophthalmia	2	3.75	15	.04	.07	7.5	2	3.75							
Retinal congestion	3	5.63	153	.41	.77	51	3	5.63							
Ulceration	1	1.87	7	.01	.01	7	1	1.87							
Total	14	26.31	272	.74	1.39	19.42	14	26.31							
3. *Diseases of the ear.*															
Otitis	1	1.87	6	.01	.01	6	1	1.87							
Otorrhœa	1	1.87	3			3	1	1.87							
Surdities	1	1.87	8	.02	.03	8	1	1.87							
Total	3	5.63	17	.04	.07	5.66	3	5.63							
4.—*Diseases of the teeth.*															
Odontalgia	5	9.39	6	.01	.01	1.2	5	9.39							
Parulis	1	1.87	26	.07	.13	26	1	1.87							
Total	6	11.27	32	.08	.15	5.33	6	11.27							

Ratio per M	18.79				92.10				77.06	1.87			187.96	5.63		
Number of sick-days	117				816				713				1,046			
Average number sick daily	.31				2.20				3.91				4.49			
Average number sick daily per M	.58				4.13				7.34				8.43			
Average duration of treatment	11.70				16.65				17.39				16.46			
LOCAL DISEASES.																
1.—*Diseases of the nervous system.*																
Cephalalgia	1				10				6				17			
Epilepsia	1	1							1				2	1		
Insolatio	1												1			
Melancholia	2	1			1	1							3	2		
Nausea marina					1				3				4			
Neuralgia	1				3				6				10			
Paralysis	1	1			1	1							2	2		
Pleurodynia	3				1								4			
Total	10	3			17	2			16				43	5		
Ratio per M	18.79	5.63			31.95	3.75			30.07				80.81	9.39		
Number of sick-days	230				74				95				399			
Average number sick daily	.62				.20				.52				1.09			
Average number sick daily per M	1.16				.37				.97				2.04			
Average duration of treatment	23				4.35				5.93				9.27			
2.—*Diseases of the eye.*																
Conjunctivitis									6				6			
Hordeolum	1								1				2			
Ophthalmia									2				2			
Retinæ congestio									3				3			
Ulcus corneæ	1												1			
Total	2								12				14			
Ratio per M	3.75								22.55				26.31			
Number of sick-days	10								262				272			
Average number sick daily	.02								1.43				.74			
Average number sick daily per M	.03								2.68				1.39			
Average duration of treatment	5								21.83				19.42			

TABLE II.—*Showing the number of cases, the discharged, the invalided and dead for each disease, &c.*—Continued.

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Remarks.
									To hospital.		From service.				
	Number.	Per 1,000 of force.		Absolute.	Per 1,000 of force.		Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	
LOCAL DISEASES—Continued.															
Diseases of the genito-urinary system—Continued.															
Spermatorrhœa	3	5.63	27	.07	.13	9	3	5.63							
Urethræ strictura	1	1.87	76	.20	.37	76	1	1.87							
Varicocele	1	1.87	2			2	1	1.87							
Total	50	93.98	948	2.59	4.86	18.96	49	76.80	1	1.87					
10.—*Diseases of the locomotive system.*															
Bunion	1	1.87	3			3	1	1.87							
Periostitis	1	1.87	4	.01	.01	4	1	1.87							
Total	2	3.75	7	.01	.01	3.5	2	3.75							
11.—*Diseases of the integumentary system.*															
Abscessus	10	18.79	62	.16	.30	6.2	10	18.79							
Acne	1	1.87	5	.01	.01	5	1	1.87							
Anthrax	1	1.87	17	.04	.07	17	1	1.87							
Cellulitis	4	7.51	24	.06	.11	6	4	7.51							
Ecthyma	2	3.75	8	.02	.03	4	2	3.75							
Eczema	4	7.51	42	.11	.20	10.5	4	7.51							
Furunculus	30	56.38	163	.44	.82	5.43	28	52.62							2
Herpes	4	7.51	72	.19	.35	18	4	7.51							
Onychia	2	3.75	7	.01	.01	3.5	2	3.75							
Paronychia	6	11.27	33	.09	.16	5.5	5	9.39							1
Tinea	3	5.63	37	.10	.18	12.33	3	5.63							
Unguis involutus	1	1.87	2			2	1	1.87							
Ulcus	3	5.63	42	.11	.20	14	3	5.63							
Total	71	133.45	514	1.40	2.63	7.23	68	127.8							3

Average number sick daily per M					.15								.15			
Average duration of treatment					5.33								5.33			
5.—*Diseases of the circulatory system.*																
Angina pectoris					1	1							1	1		
Palpitatio	1												1			
Total	1				1	1							2	1		
Ratio per M	1.87				1.87	1.87							3.75	1.87		
Number of sick-days	2				2								4			
Average number sick daily													.01			
Average number sick daily per M													.01			
Average duration of treatment	2				2								2			
6.—*Diseases of the absorbent system.*																
Adenitis	4	1			4				2				10	1		
Total	4	1			4				2				10	1		
Ratio per M	7.51	1.87			7.51				3.75				18.79	1.87		
Number of sick-days	131				68				20				219			
Average number sick daily	.35				.18				.10				.59			
Average number sick daily per M	.65				.33				.18				1.10			
Average duration of treatment	32.75				17.				10				21.90			
7.—*Diseases of the respiratory system.*																
Asthma									3				3			
Bronchitis acuta					2								2			
Bronchitis chronica	4								3				7			
Catarrhus	20				3				46				69			
Laryngitis					12								12			
Phthisis pneumonica acuta					3	3							3	3		
Phthisis pneumonica chronica	1	1			2	1			2			1	5	2		1
Pleuritis	10	1			13	4			1				24	5		
Total	35	2			35	8			55			1	125	10		1
Ratio per M	65.78	3.75			65.78	15.03			103.37			1.87	235.95	18.79		1.87
Number of sick-days	541				412				449				1,402			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each ship on the South Atlantic Station.*

Diseases and injuries.	Marion.				Shenandoah.				Wachusett.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES.																
1.—*Zymotic diseases.*																
Febricula					4								4			
Febris continua simplex	1				10								11			
Febris flava	25			3									25			3
Febris intermittens	14				10				2				26			
Febris remittens					1								1			
Vaccina					2				1				3			
Total	40			3	27				3				70			3
Ratio per M	75. 18			5. 63	50. 75				5. 63				131. 57			5. 63
Number of sick-days	411				93				11				515			
Average number sick daily	1. 12				. 25				. 06				1. 40			
Average number sick daily per M	2. 10				. 46				. 11				2. 63			
Average duration of treatment	10. 27				3. 44				3. 66				7. 35			
2.—*Constitutional diseases.*																
Adynamia					6	2							6	2		
Diabetes					1				1	1			2	1		
Podagra					2								2			
Rheumatismus acutus					36								36			
Rheumatismus chronicus	6								19				25			
Syphilis primitiva					1				6				7			
Syphilis consecutiva	4				3				15				22			
Total	10				49				41	1			100	3		

Average number sick daily per M					.15								.15				
Average duration of treatment					5.33								5.33				
5.—*Diseases of the circulatory system.*																	
Angina pectoris					1	1							1	1			
Palpitatio	1												1				
Total	1				1	1							2	1			
Ratio per M	1.87				1.87	1.87							3.75	1.87			
Number of sick-days	2				2								4				
Average number sick daily													.01				
Average number sick daily per M													.01				
Average duration of treatment	2				2								2				
6.—*Diseases of the absorbent system.*																	
Adenitis	4	1			4				2				10	1			
Total	4	1			4				2				10	1			
Ratio per M	7.51	1.87			7.51				3.75				18.79	1.87			
Number of sick-days	131				68				20				219				
Average number sick daily	.35				.18				.10				.59				
Average number sick daily per M	.65				.33				.18				1.10				
Average duration of treatment	32.75				17.				10				21.90				
7.—*Diseases of the respiratory system.*																	
Asthma									3				3				
Bronchitis acuta					2								2				
Bronchitis chronica	4								3				7				
Catarrhus	20				3				46				69				
Laryngitis					12								12				
Phthisis pneumonica acuta					3	3							3	3			
Phthisis pneumonica chronica	1	1			2	1			2			1	5	2			1
Pleuritis	10	1			13	4			1				24	5			
Total	35	2			35	8			55			1	125	10			1
Ratio per M	65.78	3.75			65.78	15.03			103.37			1.87	235.95	18.79			1.87
Number of sick-days	541				412				449				1,402				

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each ship on the South Atlantic Station*—Continued.

Diseases and injuries.	Marion.				Shenandoah.				Wachusett.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																
3.—Diseases of the ear.																
Otitis									1				1			
Otorrhœa					1								1			
Surditas									1				1			
Total					1				2				3			
Ratio per M					1.87				3.75				5.63			
Number of sick-days					3				14				17			
Average number sick daily									.07				.04			
Average number sick daily per M									.13				.07			
Average duration of treatment					3				7				5.66			
4.—Diseases of the teeth.																
Odontalgia					5								5			
Parulis					1								1			
Total					6								6			
Ratio per M					11.27								11.27			
Number of sick-days					32								32			
Average number sick daily					.08								.08			

Average number sick daily	.29				1.21				.91				1.95			
Average number sick daily per M	.54				2.27				1.71				3.66			
Average duration of treatment	4.15				5.53				2.55				4.19			
9.—*Diseases of the genito-urinary system.*																
Albuminuria	1	1											1	1		
Chancroides					2								2			
Cystitis					4								4			
Gonorrhœa	3				5				21				29			
Orchitis	2				5				2				9			
Spermatorrhœa					1				2				3			
Urethræ stricture									1				1			
Varicocele					1								1			
Total	6	1			17				26				50	1		
Ratio per M	11.27	1.87			31.95				48.87				93.98	1.87		
Number of sick-days	128				214				606				948			
Average number sick daily	.34				.58				3.32				2.59			
Average number sick daily per M	.63				1.09				6.24				4.86			
Average duration of treatment	21.33				12.58				23.30				18.96			
10.—*Diseases of the locomotive system.*																
Bunion					1								1			
Periostitis					1								1			
Total					2								2			
Ratio per M					3.75								3.75			
Number of sick-days					7								7			
Average number sick daily					.01								.01			
Average number sick daily per M					.01								.01			
Average duration of treatment					3.5								3.5			
11.—*Diseases of the integumentary system.*																
Abscessus	5								5				10			
Acne					1								1			
Anthrax					1								1			
Cellulitis	4												4			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each ship on the South Atlantic Station*—Continued.

Diseases and injuries.	Marion.				Shenandoah.				Wachusett.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																
7.—*Diseases of the respiratory system*—Continued.																
Average number sick daily	1.47				1.12				2.47				3.83			
Average number sick daily per M	2.76				2.10				4.64				7.19			
Average duration of treatment	15.45				11.77				8.16				11.21			
8.—*Diseases of the digestive system.*																
Cholera morbus	5								13				18			
Colica	6				19				10				35			
Constipatio									1				1			
Diarrhœa acuta					40				25				65			
Diarrhœa chronica	7												7			
Dysenteria acuta					6				1				7			
Dyspepsia					1				2				3			
Gastritis									1				1			
Gastrodynia									1				1			
Hæmorrhois	3				6	2			3				12	2		
Hernia	1			1					2				3			1
Pharyngitis					1								1			
Rhagades ani					2								2			
Tonsillitis	4				5				6				15			
Total	26			1	80	2			65				171	2		1
Ratio per M	48.87			1.87	150.37	3.75			122.17				321.31	3.75		1.87
Number of sick-days	108				443				166				717			

Average number sick daily	.29				1.21				.91				1.95				
Average number sick daily per M	.54				2.27				1.71				3.66				
Average duration of treatment	4.15				5.53				2.55				4.19				
9.—*Diseases of the genito-urinary system.*																	
Albuminuria	1	1											1	1			
Chancroides					2								2				
Cystitis					4								4				
Gonorrhœa	3				5				21				29				
Orchitis	2				5				2				9				
Spermatorrhœa					1				2				3				
Urethræ stricturæ									1				1				
Varicocele					1								1				
Total	6	1			17				26				50	1			
Ratio per M	11.27	1.87			31.95				48.87				93.98	1.87			
Number of sick-days	128				214				606				948				
Average number sick daily	.34				.58				3.32				2.59				
Average number sick daily per M	.63				1.09				6.24				4.86				
Average duration of treatment	21.33				12.58				23.30				18.96				
10.—*Diseases of the locomotive system.*																	
Bunion					1								1				
Periostitis					1								1				
Total					2								2				
Ratio per M					3.75								3.75				
Number of sick-days					7								7				
Average number sick daily					.01								.01				
Average number sick daily per M					.01								.01				
Average duration of treatment					3.5								3.5				
11.—*Diseases of the integumentary system.*																	
Abscesses	5								5				10				
Acne					1								1				
Anthrax					1								1				
Cellulitis	4												4				

NAVAL HYGIENE.

SHENANDOAH.

This vessel, flag-ship of the South Atlantic fleet, lay at Montevideo, Uruguay, the entire first and 70 days of the second quarter, 1880, and the remaining 21 days of the latter quarter in the river de la Plata, below Buenos Ayres. In the third quarter 77 days were spent at Buenos Ayres and Montevideo, and 15 at sea. In the fourth quarter 79 days were spent at Montevideo and Rio de Janeiro, and 13 at sea. During the entire year the Shenandoah was in port 338 days, and 28 at sea.

Medical Inspector M. Bradley states in his report that—

The health of the ship has been excellent. In the beginning of October, notwithstanding the comparative exemption of Rio de Janeiro from yellow fever, all stores for the ship, no matter from what quarter or locality received, were subjected to a most careful examination, in order that nothing should be taken that would produce alarm or cause the slightest suspicion of infection; and to avoid unpleasant consequences the following means were employed to destroy the germ of the fever, if existing, in its incipiency: The bales and packages of clothing were divested of canvas and paper wrappings, and the water-proof coverings dry-washed with dilute carbolic acid; the barrels containing sugar and beans and the boxes of tobacco were treated with lime and acid; the barrels of pork and beef were thoroughly washed at the storehouse, and the hoops stripped of bark, and, when brought on board, rewashed with lime and acid (these barrels were not stowed below, but kept on deck and exposed to the winds); tools and hardware were cleaned and dried before delivered; storerooms scraped, ventilated, and whitewashed.

No coal was received at Rio.

Every precaution was adopted to prevent infection: Ship at anchor in the middle of the bay; no officer allowed to remain on shore after sundown, or 8 p. m. at farthest; no liberty granted to the men; stewards allowed three-quarters of an hour to obtain marketing, the market being within sight of the landing-place. Pulling in boats by the ship's men was discontinued shortly after entering port; this fatiguing duty devolved upon the ship's steam cutter. While the Shenandoah was at Santa Catharina the storerooms were twice broken out and all the stores received at Rio thoroughly aired.

MARION.

During the first quarter, 6 days were spent at Rio de Janeiro, 42 off Flores Island, Uruguay, and 43 at sea, 31 of which were occupied in passage from New York to Rio de Janeiro. In the second quarter 45 days were spent off Flores Island, 17 at Port Stanley, and 29 at sea. The third quarter was occupied entirely in ports of Montevideo and Buenos Ayres. In the fourth quarter 77 days were spent at Montevideo and 15 at sea, the latter in making passage to Sandy Point. During the year the Marion was 279 days in port and 87 at sea.

Surgeon H. J. Babin makes the following report:

The Marion was placed in commission on the 12th of January, 1876. After a three years' cruise on the European station she returned to the United States, received a new complement of officers and men, and was employed in the North Atlantic station until December, 1879. On the 15th of December of that year she sailed from Sandy Hook for the South Pacific station, but in consequence of an outbreak of yellow fever, which will be discussed hereafter, her destination was changed to the South Atlantic station, where she has remained up to the present time.

During the past year her complement of officers and men has averaged 194. Owing to the slight reduction in the complement, the air-space has been somewhat increased

The following tabulated statement will show the cubic air-space of each part of the ship, as well as the present cubic air-space allotted to each individual on board:

Locality.	Total cubic feet air-space.	Number of occupants.	Cubic feet air-space per person.
Cabin	5,150	1	5,150
Wardroom	6,706	11	609+
Steerage	2,572	10	257+
Berth-deck	17,713	140	126+

Her general hygienic condition in regard to ventilation, warming, and lighting has undergone no material change since the last sanitary report.

The wardroom pantry and the after part of the wardroom are badly ventilated, and the defect could easily be remedied by constructing a small inclosed hatchway running up through the after part of the cabin and opening on the poop-deck. In other respects the ventilation of the berth-deck is as good as is generally seen on vessels of her class.

As usual, the subject of bilges is by no means a satisfactory one. From their construction they are in many places inaccessible, and cannot be properly cleaned, requiring constant care and free use of disinfectants to keep them passably sweet. The gradual accumulation of oil, coal-dust, bilge-water, and other refuse in these recesses becomes, by its decomposition, an important factor in the causation of diseases incidental to a life on shipboard. It cannot be too strongly urged that these defects receive the attention they deserve whenever the ship is overhauled for another cruise.

WACHUSETT.

This vessel was in the South Atlantic fleet during the first and second quarters; the first quarter was spent entirely in port of Montevideo; 52 days of the second quarter were occupied in ports of Montevideo, Sandy Point, Patagonia; Valparaiso and Coquimbo, Chili; and 39 at sea; making for the two quarters 143 days in port, and 39 at sea.

MEDICAL TOPOGRAPHY AND SANITARY REPORTS.

REPORT OF MEDICAL INSPECTOR M. BRADLEY.

Rio does not strike a stranger as being particularly unhealthy; in fact, for drainage and cleanliness of streets the city will compare favorably with larger cities at home and abroad; indoors, however, the condition of the rooms and apartments reveals the origin of yellow fever. Every chamber has its night-utensil, concealed or exposed, covered or uncovered, and sometimes placed in the middle of the floor. The kitchen, which should be free from all contaminating and offensive odors, contains the so-called water-closet (without water), communicating with a sewer. The closet is so small that when occupied the door cannot be closed, and it is in such close proximity to the range or cooking-stove that a space of not more than 10 or 15 inches intervenes; such is the type of many hundreds of houses scattered all through the city, and until there is a more effective plan devised for removing dejections Rio will remain as it is, a pest-hole.

Twenty-five or thirty years ago it was reported as a healthful city. Within the recollection of our older naval officers yellow fever was almost unknown in Rio, or so lightly considered as a fatal disease that it did not interfere with the officers' daily or nightly amusements on shore, or their remaining on shore over night, or granting liberty to their men. The city then was much smaller in extent and population than now, sewers less numerous, but it had the same high temperature and putrefying vegetable matter as now; and all the offal of the houses, as well the dejections of the occupants, were put in tubs and buckets after sundown, carried on the heads of negroes through the streets and emptied into the bay. When the tide was out the stench was abominable, and I have been informed that it was dangerous for a gentleman to take the sidewalk after dark lest he should be run down by the "night-carriers."

The following is an enumeration of the monthly fatal cases of fever that occurred at Rio de Janeiro during the epidemic, extending from January 1 to August 31, during 1880: January, 133; February, 500; March, 468; April, 274; May, 112; June, 55; July, 18; August, 9. Total, 1,569, for eight months.

It will be seen at a glance that the greatest mortality was in February, in which month the United States ship Marion unfortunately visited the harbor.

Last year, from August 18 to September 18, there were 12 deaths from yellow fever. During the same time this year, 3; last year, from August 25 to September 25, 7; this year, from August 26 to September 25, 1.

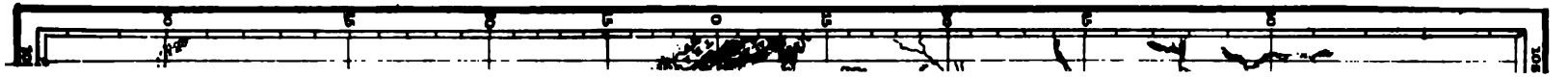
Isla Viena, on which the new naval store-house is located, is on the Praya Grande side of the bay and distant from the city about three miles. It bears the name of its possessor; is small, oblong, and rocky; faces the entrance of the harbor, and has the local and enviable reputa-

tion of being perfectly healthy in all seasons. It has never contributed a case of yellow fever. The store-house and coal-sheds on the south point of the island are substantial and commodious, and ventilated by the afternoon sea-breeze. The work of removing the government property from the old and decayed structure on Enchados Island to the new store-house was begun in June last.

Santa Catharina is a hilly and undulating island, running north and south, 30 miles long—10 miles at the broadest part and separated from the mainland by a channel or sound from 1½ to 3 miles wide. It is denominated a province and reported to have a population of 30,000. The capital, Desterro, population 6,000, is 12 miles from the northern entrance of the channel; has quite an extensive commerce with Rio, and is the only port of call for coasting steamers passing through the channel. The channel, sound, strait, or bay, is a beautiful sheet of water, clear as crystal, walled up on both sides by green hills, those on the mainland backed by the Cordilleras, and affording good anchorage off Santa Roza light for heavy vessels; its shoals, however, only permitting light craft to reach the town. The rising tides, for there are two, entering the channel by the north and south passages, meet at the bar running out from Desterro, and, after flooding, retrace their course north and south to enter the sea from whence they came. The bar is the meeting and parting place of the waters. In the middle of the channel, near the anchorage, are two islands in line—Raton *grande*, Raton *pequeña*—neither over three-quarters of a mile long. The former is used as a yellow-fever station, and the latter was occupied by small-pox patients from the United States ship Portsmouth, here in 1870.

The charity hospital in Desterro can accommodate 125 beds. It is free, supported by voluntary contributions and the proceeds from fairs and musical entertainments. The hospital tax on merchantmen, a regular Danish "sound due," is high, 32 cents being exacted of every man.

Malarial fevers are quite prevalent on the island and mainland.



SANITARY CONDITION

OF THE

PACIFIC STATION.

PACIFIC STATION.

The force in the Pacific squadron during the year 1880 consisted of the following 12 vessels: Pensacola, 2d rate, flagship; Alaska, 2d rate; Lackawanna, 2d rate; Adams, 3d rate; Ranger, 3d rate; Tuscarora, 3d rate; Wachusett, 3d rate; Independence, 3d rate, receiving-ship at Mare Island; Onward, 3d rate, storeship at Callao, Peru; Jamestown, 3d rate; and the Hassler and McArthur, Coast Survey vessels.

The strength of the squadron was 1,953, and corrected for time 1,651. There was, therefore, as compared with the force of 1879, an increase of 2 vessels and 149 men.

		Per M.
The total number of admissions, including those remaining from the preceding year, was	1,721 =	1,042.49
Discharged cured	1,556 =	942.45
Invalided	135 =	81.16
Died	4 =	1.43
Continued	26 =	15.74

There was a reduction from the sick-rate of 1879 of 78.71 per M; in the invaliding of 4.05 per M; and in the death-rate of 5.22 per M.

The total loss of service amounted to 16,545 days, or 1,271 less than in 1879. The daily average number of sick (absolute) was 10.02, 38.17 less than in 1879; and the daily average per M was 6.06, 26.02 per M less than during the preceding year, showing a very considerable reduction. The average duration of treatment was 9.61 days, slightly more than in 1879, when it was 9.08.

In comparing the sick-rate with that of the British naval force in the Pacific in 1879–'80, it is found to be less to the extent of 153.03 per M, the returns of that service having shown it to be 1,195.42 per M. The average number sick daily in the British fleet was 47.34 per M, which shows a difference of 41.28 per M in favor of our own squadron.

The Prussian naval force in the Pacific reports a sick-rate in the ratio of 840 per M, which, with the "Schonungskrank" (of which the ratio was 695.4 per M), amounts to 1,535.4 per M. Compared with our squadron, a difference in its favor of 492.91 per M is shown.

The average daily loss of service may be classified and compared with that of last year, in the following ratios per M:

General diseases:	1879.	1880.
Zymotic	3.12	1.18
Constitutional	8.42	6.14
Local diseases:		
Diseases of the nervous system	2.64	1.18
Diseases of the eye	.47	1.02
Diseases of the ear	.07	.09
Diseases of the teeth	.02	.01
Diseases of the circulatory system	.17	.52
Diseases of the absorbent system	.27	.75
Diseases of the respiratory system	3.80	3.45
Diseases of the digestive system	2.77	2.24
Diseases of the genito-urinary system	2.55	2.27

	1879.	1880
Diseases of the locomotive system	0.15	.07
Diseases of the integumentary system	2.62	2.68
Non-malignant tumors	0.16	.01
Poisons	0.25	.18
Diseases from violence	2.20	4.84

Of the 135 cases invalided there were from—

		Per M.
Zymotic diseases	10	6.05
Constitutional diseases	36	21.80
Diseases of the nervous system	10	6.05
Diseases of the eye	2	1.22
Diseases of the ear	3	1.81
Diseases of the circulatory system	7	4.23
Diseases of the respiratory system	22	13.32
Diseases of the digestive system	13	7.81
Diseases of the genito-urinary system	9	5.45
Diseases of the locomotive system	1	.60
Diseases of the integumentary system	3	1.81
Poisons	2	1.22
Diseases from violence	17	10.29

Thirteen of these were from the Alaska, 54 from the Pensacola, 15 from the Lackawanna, 2 from the Ranger, 11 from the Adams, 16 from the Tuscarora, 7 from the Wachusett, 7 from the Independence, 6 from the Jamestown, and 4 from the Onward.

Of the 4 deaths, 3, or 18 per M, came under the head of diseases of the respiratory organs, and the remaining one from violence; 2 of the former occurred on the Pensacola, and 1 on the Hassler, and the latter on the Jamestown.

The following ratios per M exhibit the sick-rates of the various ships of the squadron:

	Per M.
Pensacola	308.90
Alaska	152.63
Lackawanna	139.91
Adams	62.99
Ranger	4.23
Tuscarora	47.24
Wachusett	118.10
Independence	49.86
Jamestown	102.15
Onward	23.62
Hassler	32.10
McArthur	1.81

GENERAL DISEASES.

ZYMOTIC GROUP.

Of the diseases falling under this head, there were treated 194 cases, giving a ratio per M of 117.44, and showing a reduction, as compared with last year, to the extent of 68.31 per M. No deaths occurred, and 10, a ratio of 6.05 per M, were invalided. The loss of service amounted to 1,100 days. The following cases falling within this class were treated: Denguis, 2; erysipelas, 4; febris continua simplex, 48; febris intermittens, 123; febris remittens, 13; roseola, 3; vaccina, 1. They were distributed among the ships in the following ratios per M: Pensacola, 11.50; Lackawanna, 16.35; Alaska, 25.43; Adams, 13.32; Tuscarora, 11.50; Wachusett, 2.42; Independence, 6.05.

Denguis.—The 2 cases of this affection occurred on the Pensacola, while at Acapulco, in continuation of an epidemic mentioned in the re-

port of last year, and were discharged to duty after an average length of treatment of 9 days.

Erysipelas.—There were 4 cases of this affection reported, of which 2 occurred on the Adams and 2 on the Lackawanna; 1 of the former was invalided to hospital and the others returned to duty on board.

Febris continua simplex.—Forty-eight cases of this disease were treated, all recovering on board; 22 occurred on the Alaska, 20 on the Pensacola, 2 on the Hassler, 3 on the Wachusett, and 1 on the Ranger. The average duration of the cases was 6.16 days, so that the total loss of service was 296 days. The ratio furnished by this affection was 29.07 per M, exceeding that of last year to the extent of 17.76 per M.

Febris intermittens.—There were returns of 123 cases of this affection, which occurred from exposure to climatic influences along the coast of Mexico and at Panama; 31 of the cases occurred on the Pensacola, 24 on the Lackawanna, 19 on the Adams, 18 on the Tuscarora, and 17 on the Alaska; the others were distributed among the smaller vessels. The ratio per M given by this disease was 74.50, a decrease from that of last year of 57.32 per M. The total loss to the service was 636 days.

Roseola.—Three cases, 1.81 per M, occurred on board the Alaska.

Vaccina.—Of the cases of vaccination in this squadron, but 1 required to be relieved from duty, and this occurred on the Independence.

CONSTITUTIONAL DISEASES.

There were returned in this group of diseases 264 cases, a ratio of 159.90 per M, indicating an increase, when compared with the previous year, of 74.15 per M; 36 cases, or 21.80 per M, were invalided, an increase in the ratio of about 2 per M over that of 1879. The total loss of service was 3,713 days, a daily average of 6.14. The following were the principal factors of the group: Adynamia, 17; podagra, 7; rheumatic affections, 100; syphilitic affections, 136; and lumbago, 2 cases. The ratio per M as they occurred on the principal vessels were: Pensacola, 44.21; Lackawanna, 19.39; Jamestown, 26.03; Wachusett, 18.78; Alaska, 17.56; Independence, 4.23.

Adynamia.—Of the 17 cases returned under this head, the largest number, 9, occurred on the Pensacola, and the others on the Adams, Lackawanna, Independence, and Jamestown. The ratio per M was 10.29, which, compared with that of 1879, indicates a reduction of 5.02 per M. The invaliding rate was 4.23 per M, an increase of 1.11 per M over that of the previous year. The total loss of service was 188 days.

Podagra.—All the cases reported, 7, occurred on the Lackawanna, and the number is explained by the repeated admission of the same person for the affection.

Rheumatismus.—One hundred cases fell under this head, of which 17 were of the acute form, and 83 of the chronic. The principal sufferers were the Adams, which returned 22 cases, the Pensacola 19, and the Alaska 18 cases. Fifteen cases, all of the chronic variety, occurred on the Wachusett, 9 on the Lackawanna, 5 on the Jamestown, 4 on the Ranger, and 3 on the Hassler. The ratio given by this affection was 60.36, a reduction as compared with 1879 of 27.52 per M. Ten cases, or 6.04 per M, were invalided, an increase to the extent of 1.39 per M. The loss of service amounted to 1,088 days, a daily average of 1.79 per M.

Syphilis.—The number of admissions for primary syphilis was 42, and for secondary syphilis 94. These numbers give a case ratio for the former of 25.43 per M, showing a decrease of 25.84 per M, and for the secondary form of 56.93 per M, indicating an increase of 11.65 per M as com-

pared with the previous year. The total number of days' sickness in the squadron from primary syphilis was 578, and from secondary syphilis 1,518, the total loss of service being 294 days less than in 1879. The average period of treatment of the primary disease was 20.90 days, and of the secondary form 16.14 days. Three men, 1.81 per M, were invalided for primary syphilis, and 16, or 9.69 per M, for secondary syphilis. The following ships returned the largest number of cases: Pensacola, 42; Jamestown, 36; Lackawanna, 14; Wachusett, 15; Alaska, 11; and the Independence, 5.

Lumbago and sciatica.—Two cases of the former and 1 of the latter were returned from the flag-ship Pensacola, all of which returned to duty.

LOCAL DISEASES.

The various groups of diseases falling within this division furnished a total number of cases slightly exceeding the number of 1879.

DISEASES OF THE NERVOUS SYSTEM.

There were 82 admissions under this head, giving a ratio of 49.67 per M, and, compared with the previous year, showing a reduction of 29.73 per M. Ten persons, a ratio of 6.05 per M, were invalided, a reduction of the invalid rate of 6.26 per M. No deaths occurred. The returns of the cases were made as follows: Cephalalgia 18, dementia 3, insolatio 2, nausea marina 2, neuralgia 48, paralysis 4, vertigo 3, epilepsia and irritatio spinalis, of each 1. More than half the cases in this group, or 44, occurred on the Pensacola, 10 happened on the Wachusett, 9 on the Alaska, 6 on the Lackawanna, and others, in small numbers, on the remaining ships.

Cephalalgia.—The 18 cases shown under this head give a ratio of 10.90 per M, a reduction, as compared with the preceding year, of 15.05 per M; 6 of them occurred on the Pensacola, 5 on the Wachusett, and 3 on the Alaska. The loss of service was 84 days, 100 less than occurred in 1879. The average period of the cases was 4.66 days.

Dementia.—One case of this disease was returned from the Alaska, which was invalided to hospital, and 2 occurred on the Pensacola, which were disposed of in like manner.

Epilepsia.—A single case of this affection was reported as occurring on the Adams.

Insolatio.—Two cases of sunstroke were entered, one on the Hassler and one on the Pensacola; both recovered.

Irritatio spinalis.—The single case of this disease was reported from the Tuscarora, and after 10 days of treatment it was transferred to hospital.

Nausea marina.—In two instances this trouble became so serious as to require a relief from duty. One of them occurred on the Alaska and the other on the Lackawanna.

Neuralgia.—The number of cases of this affection entered on the sick-list was 48, a ratio per M of 29.07, which, in comparison with last year, gives almost the same showing: 413 days' loss of service occurred, being also, within a few days, the same as in 1879. Two-thirds of the cases occurred on the Pensacola, and the remainder chiefly on the Wachusett, Lackawanna, and Alaska.

Vertigo.—The three cases of this affection were all returned from the Pensacola, and involved a loss of 47 days to the service. One of them was invalided, the others being returned to duty.

DISEASES OF THE EYE.

Twenty-nine cases of diseases of the eye were under treatment in this squadron during the year, giving a ratio of 17.56 per M; compared with 1879, these figures show an increase of 8 cases, or 3.52 per M. The average period of treatment was 21.37 days, and the total loss of service was 620 days. Two persons were invalided, or 1.22 per M. The cases treated were principally as follows: Asthenopia, cataracta, iritis, keratitis, ophthalmia, of each 1; conjunctivitis, 11; ophthalmia gonorrhöica, 1; hordeolum, ophthalmia tarsi, retinitis, and ulcus cornea, of each 2. The vessels returning the largest numbers were the Pensacola, which reported 7; Independence, 6; Jamestown, 4; and Wachusett, 5.

DISEASES OF THE EAR.

There were treated of these affections 14 cases, in the ratio of 3.47 per M, which is an increase of 2.49 per M as compared with the report of last year. The loss of service was but 55 days. As was the case last year, nearly all the cases of otitis occurred on the Alaska. The Lackawanna records a case of rupture of the membranum tympani, which occurred from the concussion of a gun near which the man was standing. Complete recovery took place. One was invalided for deafness.

DISEASES OF THE TEETH.

Three cases were reported under this head; 2 of odontalgia, and 1 of parulis, with a total loss of service of 7 days.

DISEASES OF THE CIRCULATORY SYSTEM.

A total of 17 cases were reported, of which 5 were of angina pectoris, 2 of hypertrophy, and 1 of disease of the valves of the heart, 7 of palpitation, and 2 of varix. These diseases gave a ratio of 10.29 per M, a small increase (.98 per M) over that of last year. The average period of treatment was 5.11 days, and the total loss was 320 days. Seven cases, or 4.23 per M, were invalided. The largest number of cases occurred on the Tuscarora, which returned 4 of angina pectoris (repeated admissions of the same person), and 1 of palpitatio. The Pensacola and Ranger afforded each 3 cases.

DISEASES OF THE RESPIRATORY SYSTEM.

Under this head 224 cases were met with, which is in the ratio of 135.67 per M; showing an increase of 17.17 per M when compared with last year. The invaliding ratio was 13.32 per M, which is 2 per M less than that of last year, and there were 3 deaths, while last year there was but 1. The loss of service was 2,089 days, or an average of 9.32 per case. The catarrhal and bronchial affections predominated, 131 cases of the former and 50 cases of the latter having been returned; and there were 6 of asthma, 9 of phthisis pneumonica, 11 of pleuritis, and 7 of pneumonia. Two cases of hæmoptysis were treated, 1 of which proved fatal, and 1 of congestion of the lungs, which also died.

Asthma.—Three cases were reported from the Pensacola, of which 2 were invalided; one on the Wachusett and Independence, respectively, which were also invalided; and 1 on the Lackawanna, cured.

Bronchitis.—Forty-one cases of acute bronchitis were entered during the year, and 9 of chronic bronchitis. Combined, they give a ratio of

28.48 per M, a decrease of 19.45 per M as compared with the preceding year. The loss of service which they caused was 499 days; and 8 persons, a ratio of 4.85 per M, were invalided. The largest number of cases happened on the Alaska, which gave 18; the Pensacola reported 10, and the Lackawanna 7.

Catarrhus.—The total number of cases appearing under this head was 131, a ratio of 79.34 per M, which is an increase of 34.73 per M over that of last year. All the cases returned to duty, and the total loss to the service was 735 days. Forty-two cases were treated on the Wachusett, 39 on the Pensacola, 29 on the Jamestown, and 8 on the Hassler.

Congestio pulmonalis.—The fatal case of this affection occurred on the Hassler, and was that of an officer, who was found in the morning insensible in his berth, and died a few hours afterward.

Hæmoptysis.—One death occurred from this affection on board the Pensacola, and 1 case was returned to duty on board the Adams.

Laryngitis.—Seven cases of this were met with, 6 on the Pensacola and the seventh on the Independence. All recovered.

Phthisis pneumonica.—There were returned 2 cases of the acute form of this disease, and 7 of the chronic, showing, in all, a ratio per M of 10.89, a decrease from last year of 7.08 per M. Eight cases, a ratio of 4.85 per M, were invalided, and there were no deaths. The total loss of service was 385 days.

Pleuritis.—Eleven cases of this affection were entered, giving a ratio of 5.66 per M, an increase, as compared with last year, of 4 per M. One case was invalided, and the others returned to duty. The Jamestown and Wachusett reported 3 cases, respectively, and the Independence 2.

Pneumonia.—The admissions for this disease numbered 7, the same as last year, 4 of which were on the Independence, 2 on the Pensacola (one of the latter was fatal), and 1 on the Ranger. The average period of treatment was 17 days and the loss of service 119 days; one case was invalided.

DISEASES OF THE DIGESTIVE SYSTEM.

The total number of admissions for diseases of the digestive system were 246, which is in the ratio of 1.49 per M, being a decrease of 13.4 per M from that of last year. The daily average per M was 2.24, or .53 per M less than in 1879, and the average length of treatment was 5.52 days, making a total loss of service of 1,358 days from the diseases of this class. The distribution among the principal vessels of the squadron was in the following ratio: Pensacola 42.39, Lackawanna 29, Alaska 28.46, Wachusett 12.71, Adams 7.26, Hassler and Independence 8.47. The largest numbers were returned under the heads of cholera morbus, diarrhœa, colica, dyspepsia, pharyngitis and tonsillitis.

Cholera morbus.—The returns indicate an increase of this affliction as compared with last year in the ratio of 7.04 per M. The cases occurred mostly on the Lackawanna and Wachusett.

Colica.—Under this head, an increase of 5.63 per M, comparing the return with last year, is shown, the ratio of admissions being 16.34, and the Lackawanna, Pensacola, Alaska, and Jamestown giving the largest return.

Constipatio.—The reports give very nearly the same ratio of this affection as was returned last year, 5.32 per M, and the cases occurred largely on the Lackawanna and Pensacola.

Diarrhœa.—The number of cases reported of this disease during the year was 91, which was about the number of last year, but the ratio per M fell 6.81 per M. One-third of the cases happened on the Alaska, and

the remaining cases mostly on the Lackawanna and Pensacola. This affection caused the greatest loss of service in this class, viz, 321 days.

Dysenteria.—Eleven cases of the acute and chronic forms of this disease came under notice, the ratio contributed being 6.65 per M, a decrease from that of 1879 of 1.11 per M. Nearly all these cases occurred on the Lackawanna and Pensacola, as a consequence of their exposure along the hot and malarious tropical coasts of the Pacific.

Dyspepsia.—This disease contributed very nearly the same ratio as last year, 13.32 per M, the cases being distributed pretty evenly among the vessels of the fleet.

Hæmorrhois.—Eleven cases of this disease came under treatment, a ratio of 6.66 per M, showing a falling off from the returns of last year of 1.33 per M. They were all returned to duty after an average period of treatment of 9.90 days, the largest number occurring on the Alaska.

Hernia.—Six cases in all of hernia were entered upon the tables, a ratio of 3.66 per M, about one-half that of 1879, when it was 6.66 per M. Two cases were invalided.

Icterus.—Four cases of jaundice appeared on the returns, the ratio being 2.42 per M, a decrease from that of 1879 in the ratio of 2.80 per M. One case was invalided.

Œsophagi strictura.—The subject of this affection was thrice admitted to the sick-list for treatment on board the Pensacola. As recorded by Passed Assistant Surgeon S. A. Brown, the case was that of a seaman, who had in childhood drunk a solution of caustic potash, which was followed by the constriction. The admissions for treatment occurred upon occasions when obstructions from lodgment of food took place, when no treatment was given beyond the administration of food by enema for a few days, until the removal of the obstruction.

DISEASES OF THE GENITO-URINARY SYSTEM.

Of diseases included in this group, there were 82 entries, giving a case ratio of 49.67 per M, being 50.25 per M less than in 1879. Nine persons were invalided, showing a ratio of 5.45 per M, which is an increase of 2.53 over the invaliding rate of last year. The total loss of service was 1,376 days, being an average of 16.78 per case. In the cases recorded were included 1 of balanitis, 6 of chancroides, 10 of cystitis, 1 of enuresis, 28 of gonorrhœa, 2 of hæmaturia, 1 of hydrocele, 23 of orchitis, 1 each of phymosis and spermatorrhœa, 6 of stricture of the urethra, and 2 of varicocele. The vessels contributed the largest returns in this group were the Pensacola, 12.71 per M; the Wachusett and Jamestown, each 9.69 per M; and the Alaska, 5.45 per M.

Chancroides.—The six cases reported all occurred on board the Wachusett, and gave a ratio of 3.63 per M. The total loss of service amounted to 119 days, an average of 19.83 per case; and all returned to duty on board.

Cystitis.—The 10 cases reported of this affection furnished a ratio of 6.05 per M, which is an increase of 4.72 per M compared with the return of last year. They were mostly reported from the Alaska and Pensacola, and were all returned to duty, with one exception, which was invalided.

Gonorrhœa.—Returns were made of 28 cases of this affection, which is in the ratio of 16.94 per M, and, contrasted with the returns of last year, shows a decrease of 11 per M. One person was invalided, as was the case last year, and the remainder were returned to duty with an aggregate loss of 472 days' service, equal to 16.75 days per man. The vessels

contributing the largest number of cases were the Wachusett, 8; Pensacola, 6; Jamestown, 8; Hassler, 2; Independence, 2.

Hæmaturia.—The 2 cases of hæmaturia reported occurred on the Lackawanna and Pensacola, the former occurring in an officer after a long and tedious ride by rail, and unconnected, so far as could be ascertained, with any calculous or venereal origin.

Orchitis.—Twenty-five cases of this trouble gave a ratio of 13.93 per M, a small decrease of .73 per M from that of last year. All were returned to duty with one exception, which was invalided. The average period of treatment was 11.56 days, giving a total loss of service of 289 days, which is 30 less than occurred in the smaller force of last year. The largest number of cases happened on the Jamestown, which contributed 6, and there were 5 on the Alaska and Pensacola, respectively.

Urethræ strictura.—Six cases of this affection were recorded, giving a ratio of 3.63 per M, a decrease from last year of 7 cases, or 5.03 per M. The invaliding ratio was 1.81, or 4.18 per M less than in 1879. The aggregate loss of service from this trouble was 222 days, or 84 more than in the preceding year. Two cases occurred on the Adams, 2 on the Lackawanna, and 1 on the Pensacola and Wachusett, respectively.

DISEASES OF THE LOCOMOTIVE SYSTEM.

Seven cases appear under this head, the ratio being 4.25 per M. The numbers corresponding with the returns of last year. The cases were 2 of bursitis, 1 each of caries, hydrops articulorum, and synovitis, and 2 of periostitis; 1 of the latter was invalided. The Wachusett contributed 3 cases, a ratio of 1.81 per M. and the Independence 2 cases, a ratio of 1.21. The loss of service was 51 days.

DISEASES OF THE INTEGUMENTARY SYSTEM.

The returns include 176 cases under this head, a ratio of 106.60 per M, which does not greatly differ from that of last year, when it was 101.84 per M. Three cases were invalided, while last year all were returned to duty, and the loss of service in 1880 was nearly 200 days more than in 1879, amounting to a total of 1,623 days. The most numerous of the cases under observation were: Abscessus, 47; furunculus, 37; paronychia, 20; ulcus, 23. The following ratio per M will show the relative proportion of this class of diseases on board the various ships of the station: Pensacola, 28.46; Wachusett, 9.08; Lackawanna, 17.56; Alaska, 15.14; Jamestown, 12.71; Adams, 10.29; Hassler, 5.45; Tuscarora, 3.63; Independence, 3.63.

Poisons.—Thirty-three cases of alcoholism, 1 case each of delirium tremens and ebriositas, and 3 cases of poisoned wounds make up the sum of admissions under this head, a total of 38 cases, and giving a ratio of 23.01 per M. These figures show a reduction of 8 cases, or 7.61 per M from those of 1879, and the loss of service also falls from 148 days to 114 days. Two cases were this year invalided, while in 1879 none were sufficiently serious for this disposition. The Lackawanna contributed the largest number of cases, 11; there were 9 on the Independence, 5 on the Tuscarora, 4 on the Pensacola, and 2 on the Alaska, Adams, and Wachusett, respectively. The single case of delirium tremens occurred on the Alaska.

VIOLENT DISEASES AND DEATHS.

There were returned during the year 317 cases of injuries of various descriptions, making a ratio per M of 192, which is a reduction of 19

per M from that of last year. Seventeen cases, a ratio of 10.29, were invalided, and there was one death, which occurred from drowning. The loss of service amounted to 2,934 days, an average of 9.34 days for each person. The largest ratio of cases occurred on the Pensacola, which contributed 68.44 per M; there were 29.67 per M on the Lackawanna, 35.13 per M on the Alaska, and 17.56 per M on the Wachusett and Jamestown. Three interesting cases of gun-shot wounds, occurring on board the Jamestown, at Sitka, Alaska, are reported by Passed Assistant Surgeon N. M. Ferebee, all occurring in brawls on shore. In the first case there were two wounds, one passing through the middle third of the thigh, and the other a wound of the abdomen. The ball, having entered 3½ inches to the left of the median line, and below the border of the last rib, was subsequently found lodged in the muscles of the back a little to the right of the vertebral column. After severe shock peritonitis developed, attended with much tympanitis and pain, which, after appropriate treatment, yielded, and six weeks afterward the man was invalided to hospital with adynamia, both wounds having healed. The second case was a perforating wound of the chest, the ball, after passing through the fleshy part of the left arm, having entered the chest just below the axilla, and emerged at the lower portion of the sternum immediately to the left of that bone. It was found lying beneath the skin in this position, from whence it was readily removed. Air and a bloody froth made their escape from both wounds at each movement of expiration, and a considerable amount of blood was expectorated with cough. There was a good deal of dyspnœa and a distressing cough for many days, with expectoration of muco-purulent matter, clots of blood, and occasionally fluid blood. After a tedious progress complete recovery took place. In the third case a man, aged 30, native of England, received, December 2, a compound comminuted fracture of the right fore-arm from a bullet, and a second wound of the abdomen, the ball entering one and a half inches to the left of the sternum, about the region of the 8th rib, passing apparently through the abdominal cavity and lodging among the muscles of the back, near the left side of the vertebral column, where it could be felt. The shock was very severe, with vomiting of blood increased by indigestion of stimulants or food. Morphia was administered hypodermically, and nourishment was kept up by rectal alimentation. December 3, prostration was so great that his death was looked for and his ante-mortem statement taken. December 4, about a gill of fluid blood was vomited, followed by syncope, from which he was restored by subcutaneous and rectal stimulation. Up to December 13 the condition of the patient was reported as very critical, vomiting occasionally recurring, the egesta generally containing blood. On this day a probe inserted into the wound perpendicularly to the surface of the body, passed freely for about two inches, but causing nausea and vomiting it was withdrawn. Subsequent similar attempts at exploration caused like results, so that they were desisted from, and the wound gradually healed. From the position and direction of the wound and the character of the symptoms, it was suspected that the bullet passed through the stomach, although from the fact that none of its contents escaped at any time through the wound, this may be regarded as doubtful.

TABLE 1.—*Showing the force on each ship, the number admitted and discharged, number of days under treatment, and average per M of force on the Pacific Station.*

Vessels.	Strength.	Strength corrected for time.	Admitted.						Discharged.				Constant.	Number of sick-days.	Average number of days under treatment.	Daily average number of sick.		Number admitted per M of strength.
			From last year.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.	Cured.	Invalided.	Died.	Total.				Absolute.	Per M of strength.	
Alaska, 2d rate, 1,122 tons, wood, screw; service, 366 days	278	278	14	73	36	60	69	252	237	13	....	250	2	2,310	9.16	6.31	3.82	152.63
Adams, 3d rate, 615 tons, wood, screw; service, 366 days	190	190	3	36	28	16	21	104	90	11	...	101	3	976	8.42	2.66	1.61	62.99
Hassler, Coast Survey; 4th rate, -- tons; service, 366 days	41	41	....	11	12	15	15	53	52	....	1	53	....	193	3.64	.52	.31	32.10
Independence, 3d rate, 1,891 tons, wood, sails; service, 366 days	128	128	3	28	13	10	28	82	73	7	....	80	2	738	9.	2.01	1.21	49.67
Jamestown, 3d rate, 888 tons, wood, sails; service, 366 days	183	183	7	49	46	37	28	167	157	6	1	164	3	2,223	13.31	6.07	3.67	101.15
Lackawanna, 2d rate, 1,020 tons, wood, screw; service 366 days	208	208	6	28	67	62	68	231	212	15	....	227	4	1,472	6.37	4.02	2.43	139.91
McArthur, Coast Survey, 4th rate, -- tons; service, 366 days	34	34	...	.....	....	3	.....	3	3	....	....	3	....	28	9.33	.07	.04	1.81
Onward, 4th rate, 625 tons, wood, sails; service, 366 days	31	31	1	8	11	9	10	39	33	4	....	37	2	500	12.97	1.38	.83	23.63
Pensacola, 2d rate, 2,000 tons, wood, screw; service, 366 days	383	383	16	172	131	89	102	510	449	54	2	505	5	4 691	9.19	12.31	7.75	308.80
Ranger, 3d rate, 541 tons, wood, screw; service, 55 days	135	20	1	6	....	..	.....	7	5	2	....	7	....	78	11.14	1.41	.85	4.23
Tuscarora, 3d rate, 720 tons, wood, screw; service, 151 days	147	60	4	42	32	.....	.....	78	62	16	....	78	....	481	5.76	2.98	1.80	47.24
Wachusett, 3d rate, 695 tons, wood, screw; service, 184 days	200	100	.	..	.	118	77	195	188	7	....	190	5	2,879	14.76	15.64	9.47	118.11
	1 958	1, 661	55	463	376	419	418	1, 731	1, 556	135	4	1, 695	36	16, 545	9. 61	10. 09	6. 06	1, 042. 39

TABLE II.—*Showing the number of cases, the discharged, the invalided, and the dead for each disease, and their ratio per* 1,000 *of force on the Pacific Station.*

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Continued.
									To hospital.		From service.				
	Number.	Per 1,000 of force.		Absolute.	Ratio per 1,000 of force.		Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	
GENERAL DISEASES.															
1.—Zymotic diseases.															
Dengnis	2	1.22	18	.04	.02	9	2	1.22	.....	.....	.....	.....	.....	.....	.....
Erysipelas	4	2.42	11	.03	.01	2.75	3	1.81	1	.60	.....	.....	.....	.....	.....
Febris continua simplex	48	29.07	296	.80	.48	6.16	47	28.46	.....	.....	.....	.....	.....	.....	1
Febris intermittens	123	74.50	636	1.73	1.04	5.17	115	69.65	8	4.84	.....	.....	.....	.....	.....
Febris remittens	13	7.87	123	.36	.21	9.46	12	7.26	1	.60	.....	.....	.....	.....	.....
Roseola	3	1.81	10	.02	.01	3.33	3	1.81	.....	.....	.....	.....	.....	.....	.....
Vaccina	1	.60	6	.01	.....	6	1	.60	.....	.....	.....	.....	.....	.....	.....
Total	194	117.44	1,100	3	1.81	5.67	183	110.84	10	6.05	.....	....	.....	.....	1
2.—Constitutional diseases.															
Adynamia	17	10.29	188	.51	.30	11.05	10	6.05	7	4.23	.....	.....	.....	.....	.....
Anæmia	1	.60	5	.01	.....	5	1	.60	.....	.....	.....	.....	.....	.....	.....
Lumbago	2	1.22	9	.02	.01	4.5	2	1.22	.....	.....	.....	.....	.....	.....	.....
Podagra	7	4.23	25	.06	.03	3.57	7	4.23	.....	.....	.....	.....	.....	.....	.....
Rheumatismus acutus	17	10.29	246	.67	.40	14.47	14	8.47	3	1.81	.....	.....	.....	.....	.....
Rheumatismus chronicus	83	50.27	842	2.30	1.39	10.14	75	45.42	7	4.23	.....	.....	.....	.....	1
Sciatica	1	.60	2	.....	.....	2	1	.60	.....	.....	.....	.....	.....	.....	.....
Syphilis primitiva	42	25.43	878	2.39	1.44	20.90	37	22.41	3	1.81	.....	.....	.....	.....	2
Syphilis consecutiva	94	56.93	1,518	4.14	2.50	16.14	75	45.42	16	9.69	.....	.....	.....	.....	3
Total	264	159.90	3,713	10.14	6.14	14.06	222	134.45	36	21.80	.....	.....	.....	.....	6
LOCAL DISEASES.															
1.—Diseases of the nervous system.															
Cephalalgia	18	10.90	84	.22	.13	4.66	18	10.90	.....	.....	.....	.....	.....	.....	.....
Dementia	3	1.81	75	.20	.12	25	.....	.....	.....	1.81	.....	.....	.....	.....	.....

TABLE II.—*Showing the number of cases, the discharged, the invalided, and the dead for each disease, &c.*—Continued.

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Continued.
									To hospital.		From service.				
	Number.	Per 1,000 of force.		Absolute.	Ratio per 1,000 of force.		Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	
LOCAL DISEASES—Continued.															
Diseases of the nervous system—Continued.															
Epilepsia	1	.60	3	.....	.....	3	1	.60	.....	.....	.....	.....	.....	.....	.....
Insolatio	2	1.22	8	.02	.01	4	2	1.22	.....	.....	.....	.....	.....	.....	.....
Irritatio spinalis	1	.60	10	.02	.01	10	.....	.....	1	.60	.....	.....	.....	.....	.....
Nausea marina	2	1.22	4	.01	.....	2	2	1.22	.....	.....	.....	.....	.....	.....	.....
Neuralgia	48	29.07	413	1.12	.67	51.62	47	28.46	1	.60	.....	.....	.....	.....	.....
Paralysis	4	2.42	76	.20	.12	19	.....	.....	4	2.42	.....	.....	.....	.....	.....
Vertigo	3	1.81	47	.12	.07	15.66	2	1.22	1	.60	.....	.....	.....	.....	.....
Total	82	49.67	720	1.96	1.18	8.78	72	43.60	10	6.05	.....	.....	.....	.....	.....
2.—*Diseases of the eye.*															
Asthenopia	1	.60	35	.09	.05	35	1	.60	.....	.....	.....	.....	.....	.....	.....
Cataracta	1	.60	13	.03	.01	13	1	.60	.....	.....	.....	.....	.....	.....	.....
Conjunctivitis	11	6.66	53	.14	.07	4.81	11	6.66	.....	.....	.....	.....	.....	.....	.....
Hordeolum	2	1.22	6	.01	.....	3	2	1.22	.....	.....	.....	.....	.....	.....	.....
Iritis	5	3.02	99	.27	.16	19.8	5	3.02	.....	.....	.....	.....	.....	.....	.....
Keratitis	1	.60	4	.01	.....	4	1	.60	.....	.....	.....	.....	.....	.....	.....
Ophthalmia	1	.60	5	.01	.....	5	1	.60	.....	.....	.....	.....	.....	.....	.....
Ophthalmia gonorrhœica	1	.60	7	.01	.....	7	1	.60	.....	.....	.....	.....	.....	.....	.....
Ophthalmia tarsi	2	1.22	86	.23	.13	43	1	.60	1	.60	.....	.....	.....	.....	.....
Retinitis	2	1.22	236	.64	.39	118	2	1.22	.....	.....	.....	.....	.....	.....	.....
Ulcus corneæ	2	1.22	76	.20	.12	38	1	.60	.....	.....	1	.60	.....	.....	.....
Total	29	17.56	620	1.69	1.02	21.37	27	16.34	1	.60	1	.60	.....	.....	.....
3.—*Diseases of the ear.*															
Otalgia	2	1.22	8	.02	.01	4	2	1.22	.....	.....	.....	.....	.....	.....	.....
Otitis	8	4.84	29	.07	.04	3.62	6	3.63	2	1.22	.....	.....	.....	.....	.....

Otorrhœa	3	1.81	10	.02	.01	3.33	3	1.81							
Surditas	1	.60	8	.02	.01	8			1	.60					
Total	14	8.47	55	.15	.09	3.95	11	6.66	3	1.81					
4.—Diseases of the teeth.															
Odontalgia	2	1.22	6	.01		3	2	1.22							
Parulis	1	.60	1			1	1	.60							
Total	3	1.81	7	.01		2.33	3	1.81							
5.—Diseases of the circulatory system.															
Angina pectoris	5	3.02	63	.17	.10	12.6	4	2.42	1	.60					
Hypertrophia cordis	2	1.22	25	.06	.03	12.5			2	1.22					
Morbi valvularum cordis	1	.60	11	.03	.01	11									1
Palpitatio	7	4.23	216	.59	.35	30.85	4	2.42	2	1.22	1	.60			
Varix	2	1.22	5	.01		2.5	1	.60	1	.60					
Total	17	10.29	320	.87	.52	5.11	9	5.45	6	3.63	1	.60			1
6.—Diseases of the absorbent system.															
Adenitis	26	15.74	459	1.25	.75	17.65	26	15.74							
7.—Diseases of the respiratory system.															
Asthma	6	3.63	169	.46	.27	28.16	2	1.22	4	2.42					
Bronchitis acuta	41	24.83	362	.98	.59	8.80	39	23.62	2	1.22					
Bronchitis chronica	9	5.45	137	.37	.22	15.22	2	1.22	6	3.63					1
Catarrhus	131	79.34	735	2	1.21	5.61	129	78.13							2
Congestio pulmonalis	1	.60	1			1							1	.60	
Hæmoptysis	2	1.22	15	.04	.02	7.5	1	.60					1	.60	
Laryngitis	7	4.23	37	.10	.06	5.28	7	4.23							
Phthisis pneumonica acuta	2	1.22	70	.19	.11	35.00			2	1.22					
Phthisis pneumonica chronica	7	4.23	315	.86	.52	45	1	.60	6	3.63					
Pleuritis	11	6.66	129	.35	.21	11.72	10	6.05	1	.60					
Pneumonia	7	4.23	119	.32	.19	17	5	3.02	1	.60			1	.60	
Total	224	135.67	2.089	5.70	3.45	9.32	196	118.71	22	13.32			3	1.81	3
8.—Diseases of the digestive system.															
Ascites	1	.60	19	.05	.03	19			1	.60					
Cholera morbus	16	9.69	28	.07	.04	1.12	16	9.69							
Colica	27	16.34	75	.20	.12	2.77	27	16.34							
Congestio hepatis	2	1.22	9	.02	.01	4.5	1	.60			1	.60			
Constipatio	9	5.45	35	.09	.05	3.66	9	5.45							
Diarrhœa acuta	91	55.11	321	.87	.52	3.52	90	54.51							1
Diarrhœa chronica	1	.60	14	.03	.01	14	1	.60							
Dysenteria acuta	7	4.23	63	.17	.10	9	5	3.02	1	.60					1

TABLE II.—*Showing the number of cases, the discharged, the invalided, and the dead for each disease, &c.*—Continued.

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Continued.
									To hospital.		From service.				
	Number.	Per 1,000 of force.		Absolute.	Ratio per 1,000 of force.		Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	
LOCAL DISEASES—Continued.															
8.—*Diseases of the digestive system*—Continued.															
Dysenteria chronica	4	2.42	128	.34	.21	32	2	1.22	2	1.22	.....	.....	.....	.....	.....
Dyspepsia	22	13.32	107	.29	.17	4.86	19	11.50	3	1.81	.....	.....	.....	.....	.....
Fistula in ano	2	1.22	108	.29	.17	54.00	1	.60	1	.60	.....	.....	.....	.....	.....
Gastritis	2	1.22	19	.05	.03	9.5	1	.60	1	.60	.....	.....	.....	.....	.....
Hæmorrhois	11	6.66	109	.29	.17	9.90	11	6.66	.....	.....	.....	.....	.....	.....	.....
Hepatitis acuta	2	1.22	6	.01	.....	3	2	1.22	.....	.....	.....	.....	.....	.....	.....
Hernia	6	3.63	87	.23	.13	14.5	4	2.42	2	1.22	.....	.....	.....	.....	.....
Icterus	4	2.42	58	.15	.09	14.5	3	1.81	1	.60	.....	.....	.....	.....	.....
Œsophagi strictura	3	1.81	14	.03	.01	4.66	3	1.81	.....	.....	.....	.....	.....	.....	.....
Pharyngitis	22	13.32	107	.29	.17	4.86	22	13.32	.....	.....	.....	.....	.....	.....	.....
Tænia solium	1	.60	1	.....	.....	1	1	.60	.....	.....	.....	.....	.....	.....	.....
Tonsillitis	13	7.81	50	.13	.07	3.07	13	7.81	.....	.....	.....	.....	.....	.....	.....
Total	246	149.00	1,358	3.71	2.24	5.52	231	139.91	12	7.21	1	.60	.....	.....	2
9.—*Diseases of the genito-urinary system.*															
Balanitis	1	.60	60	.16	.09	60	1	.60	.....	.....	.....	.....	.....	.....	.....
Chancroides	6	3.63	119	.32	.19	19.83	6	3.63	.....	.....	.....	.....	.....	.....	.....
Cystitis	10	6.05	116	.31	.18	11.6	9	5.45	1	.60	.....	.....	.....	.....	.....
Enuresis	1	.60	6	.01	.....	6	1	.60	.....	.....	.....	.....	.....	.....	.....
Gonorrhœa	28	16.94	472	1.28	.77	16.85	27	16.34	.....	.....	1	.60	.....	.....	.....
Hæmaturia	2	1.22	31	.08	.04	15.5	2	1.22	.....	.....	.....	.....	.....	.....	.....
Hydrocele	1	.60	18	.04	.02	18	.....	.....	1	.60	.....	.....	.....	.....	.....
Orchitis	23	13.93	266	.72	.43	11.56	21	12.72	1	.60	.....	.....	.....	.....	1
Phymosis	1	.60	34	.09	.05	34	1	.60	.....	.....	.....	.....	.....	.....	.....
Spermatorrhœa	1	.60	2	.....	.....	2	.....	.....	1	.60	.....	.....	.....	.....	.....
Urethræ strictura	6	3.63	222	.60	.36	37	2	1.22	3	1.81	.....	.....	.....	.....	1
Varicocele	2	1.22	30	.08	.04	15	1	.60	1	.60	.....	.....	.....	.....	.....
Total	82	49.67	1,376	3.75	2.27	16.78	71	43.00	8	4.84	1	.60	.....	.....	2

10.—*Diseases of the locomotive system.*															
Bursitis	2	1.22	14	.08	.01	7	2	1.22							
Caries	1	.60	5	.01		5	1	.60							
Hydrops articulorum	1	.60	3			3	1	.60							
Periostitis	2	1.22	28	.07	.04	14	2	1.22							
Synovitis	1	.60	1			1			1	.60					
Total	7	4.23	51	.18	.07	7.28	6	3.63	1	.60					
11.—*Diseases of the integumentary system.*															
Abscessus	47	28.46	369	1	.60	7.85	46	27.86							1
Acne	4	2.42	9	.02	.01	2.25	4	2.42							
Callositas	1	.60	4	.01		4	1	.60							
Anthrax	1	.60	3			3	1	.60							
Ecthyma	2	1.22	18	.04	.02	9	2	1.22							
Eczema	3	1.81	140	.38	.22	46.66	1	.60	2	1.22					
Erythema	3	1.81	24	.06	.03	8	3	1.81							
Furunculus	57	34.52	383	1.04	.62	6.71	54	32.70			1	.60			2
Herpes	4	2.42	28	.07	.04	7	4	2.42							
Onychia	1	.60	4	.01		4	1	.60							
Paronychia	20	12.12	204	.55	.33	10.2	20	12.12							
Pernio	3	1.81	88	.24	.14	29.33	3	1.81							
Psoriasis	1	.60	2			2	1	.60							
Rupia	3	1.81	34	.09	.05	11.33	3	1.81							
Tinea	1	.60	1			1	1	.60							
Ulcus	23	13.93	305	.83	.50	13.26	23	13.93							
Urticaria	2	1.22	7	.01		3.5	2	1.22							
Total	176	106.60	1,623	4.43	2.68		170	102.96	2	1.22	1	.60			3
12.—*Non-malignant tumors and cysts.*															
Cystis	1	.60	3			3	1	.60							
Lipoma	1	.60	3			3	1	.60							
Total	2	1.22	6	.01		3	2	1.22							
13.—*Poisons.*															
Alcoholismus	33	19.98	96	.26	.15	2.90	32	19.38	1	.60					
Delirium tremens	1	.60	4	.01		4			1	.60					
Ebriositas	1	.60	2			2	1	.60							
Vulnus venenatum	3	1.81	12	.03	.01	4	2	1.22							1
Total	38	23.01	114	.31	.18		35	21.19	2	1.22					1
14.—*Violent diseases and deaths.*															
Abrasio	11	6.66	80	.21	.13	7.27	11	6.66							
Ambustio	17	10.29	128	.35	.21	7.52	17	10.29							

TABLE II.—*Showing the number of cases, the discharged, the invalided, and the dead for each disease, &c.*—Continued.

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Continued.
									To hospital.		From service.				
	Number.	Per 1,000 of force.		Absolute.	Ratio per 1,000 of force.		Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	Number.	Per 1,000 of force.	
LOCAL DISEASES—Continued.															
14.—*Violent diseases and deaths*—Continued.															
Concussio cerebri	2	1.22	103	.28	.17	51.5	1	.60	1	.60					
Contusio	106	64.20	650	1.77	1.07	6.13	103	62.38	1	.60					2
Fractura	15	9.08	265	.72	.43	17.66	6	3.63	9	5.45					
Luxatio	7	4.23	178	.48	.29	25.42	6	3.63	1	.60					
Stremma	76	46.02	640	1.74	1.05	8.42	72	43.60	1	.60	2	1.22			1
Submersio	1	.60	1			1							1	.60	
Vulnus contusum	34	20.58	317	.86	.52	9.32	31	18.78							3
Vulnus incisum	18	10.89	198	.54	.32	11	16	9.69	1	.60					1
Vulnus laceratum	14	8.41	143	.39	.23	10.21	14	8.41							
Vulnus punctum	14	8.41	114	.31	.18	8.14	14	8.41							
Vulnus sclopetarium	2	1.22	117	.31	.18	58.5	1	.60	1	.60					
Total	317	192.00	2,934	8.01	4.84	9.24	292	176.86	15	9.01	2	1.22	1	.60	7
Aggregate	1,721	1,042.39	16,545	45.20	27.37	9.61	1,556	942.45	128	77.53	7	4.23	4	2.42	26

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels in the Pacific station.*

Vessels or stations	Alaska.				Adams.				Hassler.				Independence.				Jamestown.			
Diseases and injuries.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.
		To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.	
GENERAL DISEASES.																				
1.—Zymotic diseases.																				
Erysipelas					2	1														
Febris continua simplex	22								2											
Febris intermittens	17	1			19	1			3				3				4			
Febris remittens					1				2				6							
Roseola	3																			
Vaccina													1							
Total	42	1			22	2			7				10				4			
Ratio per M	25.43	.60			13.32	1.21			4.23				60.5				2.42			
Number of sick-days	259				88				17				77				132			
Average number sick daily	.70				.24				.04				.21				.36			
Average number sick daily per M	42				.15				.02				.12				.21			
Average duration of treatment	6.16				4				2.42				7.7				33			
2.—Constitutional diseases.																				
Adynamia					2	1							1	1			1	1		
Anæmia																	1			
Lumbago																				
Podagra																				
Rheumatismus acutus	1				6	1														
Rheumatismus chronicus	17				16	1			3				1				5			
ciatica																				

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Vessels or stations	Alaska.				Adams.				Hassler.				Independence.				Jamestown.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES—Continued.																				
2.—*Constitutional diseases*—Continued.																				
Syphilis primitiva	3	1			1								2				10			
Syphilis consecutiva	8	2			2	1			1				3	1			26	1		
Total	29	3			27	4			4				7	2			43	2		
Ratio per M	17.56	1.81			16.35	2.42			2.42				4.23	1.21			26.03	1.21		
Number of sick-days	394				355				34				55				777			
Average number sick daily	1.07				.97				.09				.15				2.12			
Average number sick daily per M	.64				.58				.05				.09				1.27			
Average duration of treatment	13.58				13.14				8.5				7.85				17.13			
LOCAL DISEASES.																				
1.—*Diseases of the nervous system.*																				
Cephalalgia	3								1				1				1			
Dementia	1	1																		
Epilepsia					1															
Insolatio									1											
Irritatis spinalis																				
Nausea marina	1																			
Neuralgia	4												2				2			
Paralysis																				
Vertigo																				
Total	9	1			1				2				3				3			

| | | |

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Vessels or stations	Alaska.				Adams.				Hassler.				Independence.				Jamestown.			
Diseases or injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																				
4.—Diseases of the teeth.																				
Odontalgia	1												1							
Total	1												1							
Ratio per M	.60												.60							
Number of sick-days	4												2							
Average number sick daily	.01																			
Average number sick daily per M																				
Average duration of treatment	4												2							
5.—Diseases of the circulatory system.																				
Hypertrophia cordis	1	1																		
Morbi valvularum cordis													1							
Palpitatio													1		1					
Varix																				
Total	1	1											2		1					
Ratio per M	.60	.60											1.21		.60					
Number of sick-days	10												24							
Average number sick daily	.02												.06							

Average number of sick daily per M	.01											.03							
Average duration of treatment	10											12							
6.—*Diseases of the absorbent system.*																			
Adenitis	1				1				1			1				4			
Total	1				1				1			1				4			
Ratio per M	.60				.60				.60			.60				2.42			
Number of sick-days	14				30				2			29				50			
Average number sick daily	.03				.08							.07				.13			
Average number sick daily per M	.01				.04							.04				.07			
Average duration of treatment	14				30				2			29				12.5			
7.—*Diseases of the respiratory system.*																			
Asthma												1	1						
Bronchitis acuta	18				1				1			3							
Bronchitis chronica					2	2													
Catarrh	1								8			1				29			
Congestio pulmonalis									1		1								
Hæmoptysis					1														
Laryngitis												1							
Phthisis pneumonica acuta																			
Phthisis pneumonica chronica	2	2																	
Pleuritis												2				3			
Pneumonia					1							4	1						
Total	21	2			5	2			10		1	12	2			32			
Ratio per M	12.71	1.21			3.02	1.21			6.05		.60	7.26	1.21			19.38			
Number of sick-days	411				96				25			132				142			
Average number sick daily	1.12				.26				.06			.36				.38			
Average number sick daily per M	.67				.15				.03			.21				.23			
Average duration of treatment	19.57				19.2				2.5			.11				4.43			
8—*Diseases of the digestive system.*																			
Ascites												1	1						
Cholera morbus									1										
Colica	4				1							2				3			
Constipatio	1																		

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Vessels or stations	Alaska.				Adams.				Hassler.				Independence.				Jamestown.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																				
8.—*Diseases of the digestive system*—Cont'd.																				
Diarrhœa acuta	33				5				2								2			
Diarrhœa chronica													1							
Dysenteria acuta	1																			
Dysenteria chronica					1	1														
Dyspepsia					1				8				2							
Fistula in ano					1	1			1											
Gastritis													1	1						
Hæmorrhois	3								2				2				1			
Hepatitis acuta	1																			
Hernia																	1	1		
Icterus													1				1			
Pharyngitis	3				1															
Tænea solium													1							
Tonsillitis	1				2								3							
Total	47				12	2			14				14	2			8	1		
Ratio per M	28.46				7.26	1.21			8.47				8.47	1.21			4.84	.60		
Number of sick-days	209				159				55				117				35			
Average number sick daily	.57				.43				.15				.32				.09			
Average number sick daily per M	.34				.25				.09				.19				.05			
Average duration of treatment	4.44				13.25				3.92				8.35				4.37			
9.—*Diseases of the genito-urinary system.*																				
Cystitis	4																1			

Enuresis																				
Gonorrhœa									2				1				8			
Hydrocele																				
Orchitis	5				1												6			
Phymosis																	1			
Spermatorrhœa																				
Urethræ strictura					2	1														
Total	9				3	1			2				1				16			
Ratio per M	5.45				1.81	.60			1.21				.60				9.69			
Number of sick-days	81				36				10				6				173			
Average number of sick daily	.22				.09				.02				.01				.47			
Average number of sick daily per M	.13				.05				.01								.28			
Average duration of treatment	9				12				5				6				10.81			
10.—*Diseases of the locomotive system.*																				
Caries					1															
Periostitis													2							
Total					1								2							
Ratio per M					.60								1.21							
Number of sick-days					5								28							
Average number sick daily					.01								.07							
Average number sick daily per M													.04							
Average duration of treatment					5								14							
11.—*Diseases of the integumentary system.*																				
Abscessus	2				9				1				3				14			
Acne									4											
Anthrax																	1			
Eczema	1	1																		
Erythema																				
Furunculus	10				4								2				1			
Herpes																	1			
Onychia	1																			
Paronychia	3								1											
Pernio																	2			
Psoriasis													1							
Rupia																	1			
Tinea									1											

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Vessels or stations	Alaska.				Adams.				Hassler.				Independence.				Jamestown.			
Diseases and injuries.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.
		To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.	
LOCAL DISEASES—Continued.																				
Ulcus	7				4				2								1			
Urticaria	1																			
Total	25	1			17				9				6				21			
Ratio per M	15.14	60			10.29				5.45				3.63				12.71			
Number of sick-days	231				111				26				66				301			
Average number sick daily	.63				.30				.07				.18				.82			
Average number sick daily per M	.37				.18				.04				.10				.49			
Average duration of treatment	9.24				6.53				2.88				.11				14.33			
Non-malignant tumors and cysts.																				
Poisons.																				
Alcoholismus	1				2								8				1			
Delirium tremens	1	1																		
Vulnus venenatum													1				2			
Total	2	1			2								9				3			
Ratio per M	1.21	.60			1.21								5.45				1.81			
Number of sick-days	5				5								20				12			
Average number sick daily	.01				.01								.05				.03			

Average number sick daily per M												.03				.01			
Average duration of treatment	2.5				2.5							2.22				4			
Violent diseases and deaths.																			
Abrasio																2			
Ambustio	1				1											1			
Concussio cerebri																			
Contusio	26				1			1								6			
Fractura	2				1											1	1		
Luxatio	3	1										1				2			
Stremma	11		2		2							2				9			
Submersio																1			1
Vulnus contusum	7							2				3				2			
Vulnus incisum	2				1							2				3			
Vulnus laceratum	2				4														
Vulnus punctum	4																		
Vulnus sclopetarium																2	1		
Total	58	1	2		10			3				8				29	2		1
Ratio per M	35.13	.60	1.21		6.05			1.81				4.84				17.56	1.21		.60
Number of sick-days	568				76			18				78				490			
Average number sick daily	1.55				.20			.04				.21				1.36			
Averge number sick daily per M	.93				.12			.02				.12				.81			
Average duration of treatment	9.70				7.6			6				9.75				16.86			
Grand aggregate	252	11	2		104	11		53			1	82	6	1		167	6		1
Ratio per M	152.63	6.66	1.21		62.99	6.66		32.10			.60	49.86	3.63	.60		102.15	3.63		
Number of sick-days	2,310				976			193				738				2,223			
Average number sick daily	6.31				2.66			.52				2.01				6.07			
Average number sick daily per M	3.78				1.59			.31				1.20				3.64			
Average duration of treatment	9.16				9.38			3.75				9				13.32			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Vessels or stations	Lackawanna.				McArthur.				Onward.				Pensacola.			
		Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES—Continued.																
1.—*Zymotic diseases.*																
Dengnis													2			
Erysipelas	2															
Febris continua simplex													20			
Febris intermittens	24								4				31			
Febris remittens	1	1							1							
Roseola																
Vaccina																
Total	27	1							5				53			
Ratio per M	16.35	.60							3.02				32.09			
Number of sick-days	100								26				316			
Average number sick daily	27								.07				.86			
Average number sick daily per M	.16								.04				.51			
Average duration of treatment	3.70								5.2				5.96			
2.—*Constitutional diseases.*																
Adynamia	2	1							1				9	3		
Lumbago													2			
Podagra	7															
Rheumatismus acutus	3								2	1			5	1		
Rheumatismus chronicus	6	1							2	1			14	3		
Sciatica													1			
Syphilis primitiva	4								7				9	1		

Syphilis consecutiva	10	2						1				33	9		
Total	32	4						13	2			73	17		
Ratio per M	19.38	2.42						7.87	1.21			44.21	10.29		
Number of sick-days	291							226				837			
Average number sick daily	.79							.61				2.01			
Average number sick daily per M	47							36				1.20			
Average duration of treatment	9.09							17.38				11.46			
LOCAL DISEASES.															
1.—*Diseases of the nervous system.*															
Cephalalgia	1											6			
Dementia												2	2		
Insolatio												1			
Nausea marina	1														
Neuralgia	4											30	1		
Paralysis												2	2		
Vertigo												3	1		
Total	6											44	6		
Ratio per M	3.63											26.65	3.63		
Number of sick-days	23											493			
Average number sick daily	06											1.45			
Average number sick daily per M	.03											.87			
Average duration of treatment	3.83											11.20			
2.—*Diseases of the eye.*															
Asthenopia	1														
Conjunctivitis	1											3			
Hordeolum												1			
Iritis												1			
Keratitis	1														
Ophthalmia												1			
Ulcus corneæ												1		1	
Total	3											7		1	
Ratio per M	1.81											4.23		.60	

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Vessels or stations	Lackawanna.				McArthur.				Onward.				Pensacola.			
		Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																
2.—*Diseases of the eye*—Continued.																
Number of sick-days	40												114			
Average number sick daily	.10												.31			
Average number sick daily per M	.06												.18			
Average duration of treatment	13.33												16.34			
3.—*Diseases of the ear.*																
Otalgia	1												1	1		
Surditas																
Total	1												1	1		
Ratio per M	60												.60	.60		
Number of sick-days	1															
Average number sick daily																
Average number sick daily per M																
Average duration of treatment	1															
4.—*Diseases of the teeth.*																
Parulis	1															
Total	1															

Ratio per M	60														
Number of sick-days	1														
Average number sick daily															
Average number sick daily per M															
Average duration of treatment	1														
5.—Diseases of the circulatory system.															
Hypertrophia cordis												1	1		
Palpitatio								3	1						
Varix												2	1		
Total								3	1			3	2		
Ratio per M								1.81	.60			1.81	1.21		
Number of sick-days								58				20			
Average number sick daily								.15				.05			
Average number sick daily per M								.09				.03			
Average duration of treatment								19.33				6.66			
6.—Diseases of the absorbent system.															
Adenitis	4											10			
Total	4											10			
Ratio per M	2.42											6.05			
Number of sick-days	36											259			
Average number of sick days	.09											.70			
Average number sick daily per M	.05											.42			
Average duration of treatment	9											25.9			
7.—Diseases of the respiratory system.															
Asthma	1											3	2		
Bronchitis acuta	7							1				7	2		
Bronchitis chronica	1	1										3			
Catarrh	2							3				39			
Hæmoptysis												1			1
Laryngitis												6			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Vessels or stations	Lackawanna.				McArthur.				Onward.				Pensacola.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																
7.—*Diseases of the respiratory system*—Continued.																
Phthisis pneumonica acuta	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	1	1	.....	.....
Phthisis pneumonica chronica	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....
Pleuritis	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	1	.....	.....
Pneumonia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	1
Total	13	2	.....	.....	.....	.....	.....	.....	6	1	.....	.....	64	9	.....	2
Ratio per M	7.87	1.21	.....	.....	.....	.....	.....	.....	3.63	.60	.....	.....	38.76	5.45	.....	1.21
Number of sick-days	88	.....	.....	.....	.....	.....	.....	.....	114	.....	.....	.....	400	.....	.....	.....
Average number sick daily	.24	.....	.....	.....	.....	.....	.....	.....	.31	.....	.....	.....	1.09	.....	.....	.....
Average number sick daily per M	.15	.....	.....	.....	.....	.....	.....	.....	18	.....	.....	.....	.65	.....	.....	.....
Average duration of treatment	6.76	.....	.....	.....	.....	.....	.....	.....	19	.....	.....	.....	6.25	.....	.....	.....
8.—*Diseases of the digestive system.*																
Cholera morbus	7	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Colica	7	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	7	.....	.....	.....
Corysetio hepatis	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Constipatio	5	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	2	.....	.....	.....
Diarrhœa acuta	17	.....	.....	.....	1	.....	.....	.....	3	.....	.....	.....	23	.....	.....	.....
Dysenteria acuta	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	1	.....	.....
Dysenteria chronica	3	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dyspepsia	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	6	3	.....	.....
Gastritis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Hæmorrhois	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
Hepatitis acuta	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Hernia	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....

Icterus													3			
Œsophagi strictura													17			
Pharyngitis													2			
Tonsillitis	2															
Total	48	2			2				6				70			
Ratio per M	29.06	1.21			1.21				3.63				42.39			
Number of sick-days	254				11				32				322			
Average number sick daily	.69				.03				.08				.87			
Average number sick daily per M	.41				.01				.04				.52			
Average duration of treatment	5.29				5.5				5.33				4.6			
9.—Diseases of genito-urinary system.																
Balanitis													1			
Cystitis													4	1		
Enuresis													1			
Gonorrhœa	2												6		1	
Hæmaturia	1												1			
Hydrocele													1	1		
Orchitis	1								2				5			
Urethræ strictura	2	1											1	1		
Varicocele													1	1		
Total	6	1							2				21	4	1	
Ratio per M	3.63	.60							1.21				12.71	2.42	.60	
Number of sick-days	118								32				489			
Average number sick daily	.32								.08				1.33			
Average number sick daily per M	.19								.04				.79			
Average duration of treatment	19.66								16				23			
11.—Diseases of the integumentary system.																
Abscessus	11												4			
Ecthyma	2															
Eczema													1	1		
Erythema	2															
Furunculus	9								1				17		1	
Herpes													3			
Paronychia	2												11			
Pernio													1			
Psoriasis													1			
Rupia													2			
Ulcus	2												7			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Vessels or stations	Lackawanna.				McArthur.				Onward.				Pensacola.			
		Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																
11.—*Diseases of the integumentary system*—Continued.																
Urticaria	1															
Total	29								1				47	1	1	
Ratio per M	17.56								.60				28.46	.60	.60	
Number of sick-days	198								2				449			
Average number sick daily	54												1.22			
Average number sick daily per M	.32												.73			
Average duration of treatment	6.83								2				9.55			
Non-malignant tumors and cysts.																
Cystis	1															
Total	1															
Ratio per M	.60															
Number of sick-days	3															
Average number sick daily																
Average number sick daily per M																
Average duration of treatment	3															
Poisons.																
Alcoholismus	10	1											4			

Ebriositas	1														
Total	11	1										4			
Ratio per M	6.66	.60										2.42			
Number of sick-days	44											14			
Average number sick daily	.12											.03			
Average number sick daily per M	.07											.01			
Average duration of treatment	4											3.5			
Violent diseases and deaths.															
Abrasio												7			
Ambustio	7							1				5			
Concussio cerebri															
Contusio	12							1				40	1		
Fractura	3	3										6	5		
Luxatio												1			
Stremma	12				1							32	1		
Vulnus contusum	2							1				13			
Vulnus incisum	4	1										3			
Vulnus laceratum	7											1			
Vulnus punctum	2											5			
Total	49	4			1			3				113	7		
Ratio per M	29.67	2.42			.60			1.81				68.44	4.23		
Number of sick days	275				17			16				978			
Average number sick daily	.75				.04			.04				2.67			
Average number sick daily per M	.45				.02			.02				1.60			
Average duration of treatment	5.61				.17			5.33				8.65			
Grand aggregate	231	15			3			39	4			510	15	3	2
Ratio per M	139.91	9.08			1.81			23.62	2.42			308.90	30.89	1.81	1.21
Number of sick-days	1,472				28			506				4,691			
Average number sick daily	4.01				.07			1.38				12.81			
Average number sick daily per M	2.40				.04			.82				7.75			
Average duration of treatment	6.37				9.33			13				9.19			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Vessels or stations	Ranger.				Tuscarora.				Wachusett.				Total.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
GENERAL DISEASES.																
1.—*Zymotic diseases.*																
Denguis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
Erysipelas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	1	.....	.....
Febris continua simplex	1	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	48	.....	.....	.....
Febris intermittens	.....	.....	.....	.....	18	6	.....	.....	.....	.....	.....	.....	123	8	.....	.....
Febris remittens	.....	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	13	1	.....	.....
Roseola	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....
Vaccina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Total	1	.....	.....	.....	19	6	.....	.....	4	.....	.....	.....	194	10	.....	.....
Ratio per M	.60	.....	.....	.....	11.50	3.63	.....	.....	2.42	.....	.....	.....	117.50	6.05	.....	.....
Number of sick-days	14	.....	.....	.....	54	.....	.....	.....	17	.....	.....	.....	1,100	.....	.....	.....
Average number sick daily	.27	.....	.....	.....	.35	.....	.....	.....	.09	.....	.....	.....	.29	.....	.....	.....
Average number sick daily per M	.16	.....	.....	.....	.21	.....	.....	.....	.05	.....	.....	.....	.17	.....	.....	.....
Average duration of treatment	14	.....	.....	.....	2.84	.....	.....	.....	4.25	.....	.....	.....	5.67	.....	.....	.....
2.—*Constitutional diseases.*																
Adynamia	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	17	7	.....	.....
Anæmia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Lumbago	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
Podagra	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	.....	.....	.....
Rheumatismus acutus	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17	3	.....	.....
Rheumatismus chronicus	.....	.....	.....	.....	4	.....	.....	.....	15	1	.....	.....	83	7	.....	.....
Sciatica	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....

Syphilis primitiva					1	1			5				42	3		
Syphilis consecutiva									10				94	16		
Total					5	1			31				264	36		
Ratio per M					3.02	.60			18.78				159.90	21.80		
Number of sick-days					39				705				3,713			
Average number sick daily					.22				3.83				1			
Average number sick daily per M					13				2.29				.60			
Average duration of treatment					7.8				22.74				14.06			
LOCAL DISEASES.																
1.—*Diseases of the nervous system.*																
Cephalalgia									5				18			
Dementia													3	3		
Epilepsia													1			
Insolatio													2			
Irritatis spinalis					1	1							1	1		
Nausea marina													2			
Neuralgia					1				5				48	1		
Paralysis	1	1			1	1							4	4		
Vertigo													3	1		
Total	1	1			3	2			10				82	10		
Ratio per M	.60	.60			1.81	1.21			6.05				49.66	6.05		
Number of sick-days	1				13				84				720			
Average number sick daily	.01				.08				.25				.37			
Average number sick daily per M					.04				.15				.22			
Average duration of treatment	1				4.33				8.4				8.78			
2.—*Diseases of the eye.*																
Asthenopia													1			
Cataracta													1			
Conjunctivitis													11			
Hordeolum									1				2			
Iritis									2				5			
Keratitis													1			
Ophthalmia													1			
Ophthalmia gonorrhöica													1			
Ophthalmia tarsi													2	1		

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the records, &c.* (Continued)

Vessels or stations	Range				Tamarua.				Waikouaiti				Total			
		Invalided				Invalided				Invalided				Invalided		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																
2.—Diseases of the eye—Continued.																
Retinitis									2				2			
Ulcus corneæ															1	
Total									2				2	1	1	
Ratio per M									3 09				17 38	60	60	
Number of sick-days									237				237			
Average number sick daily									1 00				1 00			
Average number sick daily per M									1 01				1 00			
Average duration of treatment									81 4				81 4			
3.—Diseases of the ear.																
Otalgia					2				1				3			
Otitis					2	2							2	2		
Otorrhœa																
Surditas																
Total					2	2			1				3	2		
Ratio per M					1 91	1 91			1 01				2 17	1 81		
Number of sick-days					2				10				10			
Average number sick daily					01				03				01			

Average number sick daily per M									.04							
Average duration of treatment					1				5.33				3.92			
4.—Diseases of the teeth.																
Odontalgia													2			
Parulis													1			
Total													3			
Ratio per M													1.81			
Number of sick-days													7			
Average number sick daily																
Average number sick daily per M																
Average duration of treatment													2.33			
5.—Diseases of the circulatory system.																
Angina pectoris	1	1			4								5	1		
Hypertrophia cordis													2	2		
Morbi valvularum cordis													1			
Palpitatio					1				2	1			7	2	1	
Varix													2	1		
Total	1	1			5				2	1			17	6	1	
Ratio per M	.60	.60			3.02				1.21	.60						
Number of sick-days	41				35				132				320			
Average number sick daily	.60				.23				.71				.08			
Average number sick daily per M	.41				.14				.42				.04			
Average duration of treatment	.41				7				66				18.82			
6.—Diseases of the absorbent system.																
Adenitis					2				2				26			
Total					2				2				26			
Ratio per M					1.21				1.21				15.74			
Number of sick-days					17				22				459			
Average number sick daily					11				.11				.12			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Vessels or stations	Ranger.				Tuscarora.				Wachusett.				Total.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																
6.—*Diseases of the absorbent system*—Continued.																
Average number sick daily per M	.....	.....	.....	.....	.06	.....	.....	.....	.06	.....	.....	.....	.07	.....	.....	.....
Average duration of treatment	.....	.....	.....	.....	8.5	.....	.....	.....	11	.....	.....	.....	17.65	.....	.....	.....
7.—*Diseases of the respiratory system.*																
Asthma	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	6	4	.....	.....
Bronchitis acuta	1	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	41	2	.....	.....
Bronchitis chronica	.....	.....	.....	.....	1	1	.....	.....	2	.....	.....	.....	9	6	.....	.....
Catarrh	.....	.....	.....	.....	6	.....	.....	.....	42	.....	.....	.....	131	.....	.....	.....
Congestio pulmonalis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1
Hæmoptysis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	1
Laryngitis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	.....	.....	.....
Phthisis pneumonica acuta	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	2	.....	.....
Phthisis pneumonica chronica	.....	.....	.....	.....	1	1	.....	.....	2	1	.....	.....	7	6	.....	.....
Pleuritis	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	11	1	.....	.....
Pneumonia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	1	.....	1
Total	1	.....	.....	.....	9	2	.....	.....	51	2	.....	.....	224	22	.....	3
Ratio per M	.60	.....	.....	.....	5.45	1.21	.....	.....	30.89	1.21	.....	.....	135.67	13.32	.....	1.81
Number of sick days	4	.....	.....	.....	80	.....	.....	.....	597	.....	.....	.....	2,089	.....	.....	.....
Average number sick daily	.07	.....	.....	.....	.53	.....	.....	.....	3.24	.....	.....	.....	.56	.....	.....	.....
Average number sick daily per M	.04	.....	.....	.....	.31	.....	.....	.....	1.94	.....	.....	.....	.33	.....	.....	.....
Average duration of treatment	4	.....	.....	.....	8.88	.....	.....	.....	11.70	.....	.....	.....	9.32	.....	.....	.....

8.—Diseases of the digestive system.																
Ascites													1	1		
Cholera morbus					1				5				16			
Colica									2				27			
Congestio hepatis									1		1		2		1	
Constipatio													9			
Diarrhœa acuta									5				91			
Diarrhœa chronica													1			
Dysenteria acuta													7	1		
Dysenteria chronica													4	2		
Dyspepsia									3				22	3		
Fistula in ano													2	1		
Gastritis													2	1		
Hæmorrhois													11			
Hepatitis acuta																
Hernia									2				6	2		
Icterus									2	1			4	1		
Œsophagi strictura													3			
Pharyngitis									1				22			
Tænea solium													1			
Tonsillitis					3								13			
Total					4				21	1	1		246	12	1	
Ratio per M					2.42				12.71	.60	.60		145.99	7.26	.60	
Number of sick-days					12				152				1,358			
Average number sick daily					.07				.82				.36			
Average number sick daily per M					.04				.49				.21			
Average duration of treatment					3				7.24				5.56			
9. Diseases of the genito-urinary system.																
Balanitis													1			
Chancroides									6				6			
Cystitis					1								10	1		
Enuresis													1			
Gonorrhœa	1								8				28		1	
Hæmaturia													2			
Hydrocele													1	1		
Orchitis	2				1	1							23	1		
Phymosis													1			
Spermatorrhœa					1	1							1	1		
Urethræ strictura									1				6	3		
Varicocele									1				2	1		
Total	3				3	2			16				82	8	1	

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Vessels or stations	Ranger.				Tuscarora.				Wachusett.				Total.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																
9.—*Diseases of the genito urinary system*—Continued.																
Ratio per M	1.81	.....	.....	.....	1.81	1.21	.....	.....	9.69	.....	.....	.....	49.66	4.84	.60	.....
Number of sick-days	18	.....	.....	.....	13	.....	.....	.....	400	.....	.....	.....	1,376	.....	.....	.....
Average number of sick daily	.35	.....	.....	.....	.08	.....	.....	.....	2.17	.....	.....	.....	.37	.....	.....	.....
Average number of sick daily per M	.21	.....	.....	.....	.04	.....	.....	.....	1.30	.....	.....	.....	.22	.....	.....	.....
Average duration of treatment	6	.....	.....	.....	4.33	.....	.....	.....	25	.....	.....	.....	16.78	.....	.....	.....
10.—*Diseases of the locomotive system.*																
Bursitis	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	2	.....	.....	.....
Caries	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Hydrops articulorum	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....
Periostitis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
Synovitis	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	1	1	.....	.....
Total	.....	.....	.....	.....	1	1	.....	.....	3	.....	.....	.....	7	1	.....	.....
Ratio per M	.....	.....	.....	.....	.60	.60	.....	.....	1.81	.....	.....	.....	4.23	.60	.....	.....
Number of sick-days	.....	.....	.....	.....	1	.....	.....	.....	17	.....	.....	.....	51	.....	.....	.....
Average number of sick daily	.....	.....	.....	.....	.....	.....	.....	.....	.09	.....	.....	.....	.01	.....	.....	.....
Average number sick daily per M	.....	.....	.....	.....	.....	.....	.....	.....	.05	.....	.....	.....	.....	.....	.....	.....
Average duration of treatment	.....	.....	.....	.....	1	.....	.....	.....	5.66	.....	.....	.....	7.28	.....	.....	.....

11.—*Diseases of the integumentary system.*

| | | |

NAVAL HYGIENE.

PENSACOLA.

During the first quarter 1880, this vessel lay at Callao, Peru, 45 days; at Panama, 16; Acapulco, Mexico, 3; Punta Arenas, 1; Peton, 1; Corinto, 1, and was at sea 24 days. In the second quarter 10½ days were spent at San Blas, Mazatlan, and Pichilinque Bay, Mexico; 57 at San Francisco and Mare Island, California, and 23½ at sea. The third and fourth quarters were occupied entirely at the navy-yard, Mare Island, California. During the year the Pensacola lay in port 319 days, and was at sea 47 days.

Surgeon W. K. Scofield makes the following remarks:

For a year and a half up to April last, the ship had been cruising mostly within the tropics. My predecessor, Medical Inspector Nelson, had reported that cases of fever had been frequent and were daily becoming more so; and although there were no serious cases of disease on board, the predisposition to disease was daily becoming more evident, as shown in a feeling of general malaise complained of by many of the officers. The crew also was in that condition most susceptible to those influences which cause disease, and which was not in any way connected with the general hygienic condition of the ship itself, for that was excellent and in all respects satisfactory.

The sick-list decreased as the ship approached the Mare Island station. Upon her arrival in April, twenty-four men were sent to the Mare Island hospital, and the health of the ship's company was excellent during the remainder of the year, which was spent at the navy-yard.

LACKAWANNA.

During the first quarter, this vessel lay at San Francisco and Mare Island, Cal., 59 days, at Honolulu 11, and was at sea 21 days. In the second quarter, 33 days were spent at San Francisco and Mare Island, Cal., 8 in Mexican ports, 17 at various small ports from Callao to Panama, and 33 at sea. In the third quarter, 80 days were occupied in ports on the coast of Peru and 12 at sea. In the fourth quarter, 82 days were occupied in ports in Peru and 10 at sea. During the year the Lackawanna was in port 290 days and at sea 76 days.

Surgeon C. H. White observes as follows in his report:

The health of the officers and crew of this vessel has been excellent since I joined her in May last. On this whole coast intermittent fever constantly prevails, but we have had very little on board. This immunity is, I think, due in a great measure to the fact that the men have had very little liberty on shore where they could contract the more serious malarial disease. Some of the foreign men-of-war have not been equally fortunate: one, an English vessel, has had 40 cases in a crew of a little more than 400. The curtailing of the liberty of the men has been also a benefit in that but one man of the general crew has contracted syphilis during these eight months. There have been very few cases of gonorrhœa—6 only in a complement of 220.

Distilled water is alone used for cooking and drinking purposes. Water from the shore is taken on board for washing, but none has been found sufficiently pure to safely replace distilled water for drinking.

There is an article of clothing worn by the men which I wish to attack, viz, the cap. When one says it is becoming and sailor like, one has named all its virtues. It is heavy and hot, gives little protection against the rain, and none against the sun. The regulations permit straw hats to be worn by the men in the tropics, but I have never yet seen them furnished on any ship to which I have been attached. The great objection to hats is, that when not in use they take up much room on board, where there is little to spare, but this objection is counterbalanced by their positive benefits.

There has been no change in the internal arrangements of the ship. The ventilation throughout is fairly good, with the exception of that of the after part of the wardroom, including the pantry. At sea, at night, this part of the ship becomes very offensive, and a ventilating pipe extending to the upper deck is earnestly recommended.

The greatest evil we have to contend with is the want of light. The sick-bay has

Vulnus laceratum												14			
Vulnus punctum								3				14			
Vulnus sclopetarium												2	1		
*Total				14				29	1			317	15	2	1
tio per M				8.47				17.56	.60			192	9.08	1.21	.60
nber of sick-days				137				278				2,934			
rage number sick daily				1.57				1.42				.79			
rage number sick daily per M				.94				.85				.47			
rage duration of treatment				9.78				9.37				9.25			
Grand aggregate	7	2		78	16			195	6	1		1,721	128	7	4
io per M	4.23	1.21		47.24	9.69			118.10	3.63	.60		142.29	77.52	4.23	2.42
nber of sick-days	78			451				2,879				16,455			
erage number sick daily	1.52			2.98				15.64				4.49			
verage number sick daily per M	.91			1.78				9.47				3.71			
Average duration of treatment	11.14			5.78				14.71				9.61			

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During the first quarter, this vessel lay at San Francisco and Mare Island, Cal., 59 days, at Honolulu 11, and was at sea 21 days. In the second quarter, 33 days were spent at San Francisco and Mare Island, Cal., 8 in Mexican ports, 17 at various small ports from Callao to Panama, and 33 at sea. In the third quarter, 80 days were occupied in ports on the coast of Peru and 12 at sea. In the fourth quarter, 82 days were occupied in ports in Peru and 10 at sea. During the year the Lackawanna was in port 290 days and at sea 76 days.

Surgeon C. H. White observes as follows in his report:

The health of the officers and crew of this vessel has been excellent since I joined her in May last. On this whole coast intermittent fever constantly prevails, but we have had very little on board. This immunity is, I think, due in a great measure to the fact that the men have had very little liberty on shore where they could contract the more serious malarial disease. Some of the foreign men-of-war have not been equally fortunate; one, an English vessel, has had 40 cases in a crew of a little more than 400. The curtailing of the liberty of the men has been also a benefit in that but one man of the general crew has contracted syphilis during these eight months. There have been very few cases of gonorrhœa—6 only in a complement of 220.

Distilled water is alone used for cooking and drinking purposes. Water from the shore is taken on board for washing, but none has been found sufficiently pure to safely replace distilled water for drinking.

There is an article of clothing worn by the men which I wish to attack, viz, the cap. When one says it is becoming and sailor like, one has named all its virtues. It is heavy and hot, gives little protection against the rain, and none against the sun. The regulations permit straw hats to be worn by the men in the tropics, but I have never yet seen them furnished on any ship to which I have been attached. The great objection to hats is, that when not in use they take up much room on board, where there is little to spare, but this objection is counterbalanced by their positive benefits.

There has been no change in the internal arrangements of the ship. The ventilation throughout is fairly good, with the exception of that of the after part of the wardroom, including the pantry. At sea, at night, this part of the ship becomes very offensive, and a ventilating pipe extending to the upper deck is earnestly recommended.

The greatest evil we have to contend with is the want of light. The sick-bay has

four dead-lights and a hatch opening into it, but, owing to the smallness of the dead-lights and the shadowing of the hatch by the forecastle, sufficient light for writing is only obtained by the use of candles. This want of light is felt throughout the ship except in the cabin, which is on the upper deck, and it is desirable, if the ship is again put under repairs, that some means be devised for remedying this defect. Large square ports like the Richmond's might be cut, except near the bow and stern, where, perhaps, the timbers are too close together to admit of any great increase of the present size.

WACHUSETT.

This vessel was in the Pacific fleet the third and fourth quarters of the year; during the third quarter she lay 42 days in ports along the coast of Chili and Peru, and was 50 days at sea. In the fourth quarter, 51 days were spent at Panama, 9 at Guayaquil, 18 at Callao, Chimbote, and Payta, and 14 at sea. During this entire period the Wachusett lay 120 days in port, and was 64 days at sea.

Surgeon J. B. Parker, in his report, says:

Among the improvements recently made on the ship are the removal of the galley from the berth to the spar deck, an increased length of forecastle, flush bilge, with traps to examine it in nearly every part, and a door leading from the berth-deck into the upper part of the fire-room. The sick-bay is all that could be expected in a vessel of this kind; it is spacious, inclosed, contains a water-closet, and is ventilated by two air-ports and a hatch large enough to admit a windsail. The dispensary, which was on the afterpart of the berth-deck, has been placed alongside the sick-bay.

No subject deserving the attention of the department is more important and urgent than a change in the location of the "head," if it cannot be protected in its present position. The exposure of the men during severe weather and gales, especially at night, when in a partly nude condition and on leaving the fire-room, cannot fail to increase the sick-list and cause invaliding.

It is also hoped that the practice of locating the wardroom pantry in the after part of the wardroom without means to ventilate it will be abandoned.

HASSLER.

This vessel lay at San Francisco, Cal., all the first and second quarters. On the 28th September she started on a scientific expedition to Central America and Mexico, making short calls at various points along the route. During the year she was 328 days in the port and 47 at sea.

ADAMS.

During the first quarter this vessel lay at Mare Island, Cal., 34 days; Golfito, Costa Rica, 30; Richilinques Bay, 3; Mazatlan, 2; and was at sea 22 days. In the second quarfer 62 days were spent at Golfito and Punta Arenas, Costa Rica; 14 at Payta and Chimbote, Peru; and 15 at sea. In the third quarter 64 days were spent at points along the coast of Peru, 7 at Guayaquil, and 21 at sea. In the fourth quarter 81 days were spent at points in Peru, and 11 at sea. During the year the Adams was 297 days in port and 69 at sea.

TUSCARORA.

This vessel was in the Pacific fleet the first quarter and two months of the second. During the first quarter 39 days were spent at ports in Mexico, Salvador, and small points along the coast, and 52 at sea. During the entire term of her commission in the second quarter she lay at the navy-yard, Mare Island, Cal. During this entire period the Tuscarora was 100 days in port and 52 at sea.

RANGER.

This vessel was in the Pacific fleet the first 55 days of the first quarter 1880, during which period she lay at Mare Island navy-yard 17 days, at Honolulu 12, and was at sea 26.

ALASKA.

During the first quarter this vessel lay 79 days in ports in Coquimbo, Chili, and ports in Peru, and was 12 days at sea. In the second quarter 81 days were spent in ports along the coast of Peru and 10 at sea. In the third quarter 56 days were spent in ports in Peru and Samoa and 36 at sea. In the fourth quarter 29 days were spent at San Francisco and Mare Island navy-yard, 17 at Honolulu, 7 in Pago Pago Bay, Tutuila Island, and 39 at sea. During the year the Alaska was 269 days in port and 97 at sea.

MEDICAL TOPOGRAPHY AND SANITARY REPORTS.

REPORT OF SURGEON T. HILAND,

U. S. S. ALASKA.

Tutuila, an island of volcanic origin, one of the Samoan group, is situated in south latitude 14° 30′, west longtitude 170° 40′, and is about 17 miles long by 5 broad. Nearly every spot is covered with verdure even to the summit of the highest mountain, 2,327 feet. There are narrow valleys between the hills and small tracts level or slightly inclined, but most of the surface is on the hillsides; soil fertile, growing all tropical productions.

The temperature ranges from about 70 to 90 degrees; in sunny days the thermometer may rise into the nineties; in rainy, sink to 70 or even below, which, with the moisture-laden wind, causes a sensation of cold that the mercury does not indicate. The rainfall is very heavy for six months in the year, and sufficiently abundant the remaining to keep vegetation growing luxuriously. A drought is spoken of as occurring at intervals of several years. The island being in the southeast trades, the windward side is more agreeable and healthy than those places shut off from trade-winds. Pago Pago Bay is a comfortable and safe harbor, opening southerly. Vessels anchor in 15 to 20 fathoms in the inner harbor, which is about 1¼ miles long by one-half mile wide, and this space is narrowed by coral reefs extending out from the shores a short distance. Small streams from the steep hills surrounding empty into it, the water being of fair quality, but containing some vegetable matter in solution. Very few provisions of any kind can be procured.

The natives, about 400 in number, are of good height, with bodies well formed, frequently robust; intelligent faces; skin, brown or coppery; hair, straight and black, but generally cut short and made to stand out over the whole head by being frequently whitewashed, which bleaches more or less, so that the color is all shades from a yellowish brown to black. The men have very little beard; many none; but all are tattooed from the loins nearly down to the knees. The work is well done, the pigment used, which is the soot from the candle-nut, producing deep-blue stains.

The dress consists of cocoanut oil and of lava lava round the loins, extending half way down the thighs, made of muslin or ciapa, a cloth made from the inner bark of the mulberry tree. Larger pieces of ciapa are made by pasting together small ones with the starch from taro, and used as covering at night. Mats are used to sleep on, and for a pillow a bamboo stick on legs, raising it from 3 to 4 inches.

The foundation for a house is raised a little by large stones covered over with smaller, and finally with small pebbles or pieces of coral. Large posts are firmly set in the ground at the edge of this oblong foundation, from the tops of which a well-thatched roof is built. The sides are shut in by mats depending from the roof, overlapping each other, so that the sides are open or closed, according to the weather. A separate hut near by is sometimes used for cooking, but in every house a shallow stone-paved hole in the floor is seen, containing fire or the remains of one. Vegetables are generally well cooked, but all kinds of fish are usually eaten raw, and the little meat used imperfectly cooked.

The food of this people consists of bread fruit, taro, bananas, tarno, cocoanuts, fish, and a little pork and poultry. When the bread fruit is not ripening, food is scarce, as it is their most valuable diet, for they make very little provision for the morrow.

Vegetarians would expect to find this a paradise, but, instead, disease is by no means rare. Measles, scarlet fever, small-pox, typhoid fever, and some other diseases common in more civilized countries are unheard of here. Intermittent and remittent fevers and dysentery are common in some localities, but not of a malignant type. A patient reduced with chronic dysentery in Pago Pago Bay has little chance of recovery unless he be removed to a drier and healthier locality, which can be found on prominent points of the windward side of the island. Many children are seen with scrofulous diseases of the joints, and some pass away with marasmus. Nearly all suffer for several months, with a contagious disease, characterized by irritable ulcers, in successive crops, over the whole body, accompanied with slight fever, which occurs but once. Elephantiasis is endemic in all parts of the island, but most common in those localities cut off from the winds, and where the rainfall is greatest. In Pago Pago Bay more than four-fifths of the people over 45 years of age have the disease, on leg and thigh or both, the forearm and hand and scrotum being affected; a less number in middle life, and few young persons and children are affected. It begins with fever, which lasts from three days to a week accompanied by rigors at irregular intervals, often with vomiting, muscular, pains, &c. The local symtoms are characteristic: tenderness and pain in the leg, the part most frequently affected with some redness and swelling. The pain is not very severe, but the affected part is sensitive and irritable, like a boil. A red, tender line extends up the inside of the thigh when the leg or foot is affected, on the inside of the arm in the case of the forearm or hand. This is acute elephantiasis, and one attack leaves no permanent enlargement, but the attack is liable to recur after a few months, and, after three or four attacks, the disease becomes chronic, the affected portion of the body becoming permanently hypertrophied. The natives say the attacks of fever then cease, but I believe it is simply because they ascribe the chills and fever to something else, for at such time the enlarged parts become tender and painful and increase in size. The cause seems to be exposure to wet and cold in a system debilitated by long residence in a warm, moist climate. This is, no doubt, the exciting cause; the predisposing cause is unknown. Breathing an atmosphere charged with decaying as well as the luxuriously growing vegetation, and drinking the water of these little streams, seem to me the true cause; but such surmises without particulars and proofs are worthless. On sandy, drier soil, with sea-breeze, it is almost unknown; in Pago Pago Bay, with opposite conditions, it is almost universal.

Treatment.—In acute cases the patient should be put to bed, diaphoretics freely given after a light purge, locally, warm, moist applications should be made, hot steam, perhaps, being the best. Quinine in moderate doses, and nourishing food that can be easily assimilated, should be given and the patient kept in bed a few days after the fever has subsided, and not allowed to make much use of the inflamed part for three or four weeks. After the fever has passed, tonics and extra diet, with sound, red wine, and, if possible, a change of residence, are indicated. With treatment as above indicated the cure is very often complete, even when no change of residence can be effected; but, for a long time, there must be no exposure to drenching rains and cold winds, and wet clothes must be taken off and not allowed to dry on the person. The

natives have little chance of throwing off the disease, for they have neither beds, clothing, food, nor lodgings for the proper care of sick or well. The chronic form is incurable, so far as I can learn. The attacks of fever and local inflammation, which usually increase in severity, may be postponed for many months, perhaps more than a year, by avoiding exposure to wet and cold and great fatigue; and the same treatment should be followed during the attacks of fever and inflammation as in the acute form, though now it only relieves and does not cure. The swollen parts become more and more a burden, and, together with the frequent attacks of fever, wear out the patient; in the intervals of fever the patient is able to do some work, and he sometimes lives to a good old age. Several persons with enlarged scrota applied for relief; and the hypertrophied mass was removed, in six cases, by Asst. Surg. S. H. Griffith, U. S. N., and myself. The largest mass weighed 40 pounds, another 20, the others still less. The extensive wounds were healing kindly when we left the island, save one, who succumbed soon after the operation from shock. The general plan was to make a flap of skin on opposite sides, dissecting it up, dissect out the testicles and also the penis, which was more or less in the growth, remove the mass, and close the flaps over the testicles and smaller ones over the circumcised penis. Hydrocele of the sac or cord was found in most of these cases, in one hæmatocele, the testicles and cords atrophied in the larger. The mass consisted of thickened skin and areolar tissue, and interlacing fibrous bands filled with a jelly-like substance. Under the microscope, sections showed interlacing fibers of connecting tissue, but nothing diagnostic of the disease.

Several cases of hydrocele were treated, most of them by removing fluid by trocar and injecting tincture of iodine, others by incision. One withered hand and a few small tumors were removed.

Lung diseases are very prevalent, and the majority of deaths are from pulmonary consumption.

A disease described as resembling somewhat a mild form of small-pox prevails occasionally, but no case occurred during our stay.

The practitioners of medicine in the island are the Presbyterian missionary, Mr. Phillips, who has given some attention to the study of medicine, one Roman Catholic priest, one half-breed woman, and several natives. The native practitioners use decoctions of roots and barks, but their principal power comes from a sort of awe of their power with the gods who use disease to censure mankind; for, though the natives are all nominally Christians, in sickness or death they show how wedded they are to their old religion.

REPORT OF SURGEON C. H. WHITE,

U. S. S. LACKAWANNA.

La Paz is a Mexican town of about fifteen hundred inhabitants, situated on the eastern coast of Lower California, in a most uninviting sandy region. There are three "doctors" here, but only one is in active practice. There is no dispensary or any charitable medical institution. There is a hospital, but no patients ever go to it now, there being a popular belief that any one who goes there will certainly die. The cholera prevailed in 1851, and a large number perished. In 1874 the small-pox killed nearly 25 per cent. of the whole population. In 1879 an epidemic broke out which affected every person in the community.

A description of the symptoms presented leaves no doubt that the disease was dengue, but it is known here only by the name of "La Paloma Azul" (the blue pigeon). The origin of this name was as follows: Just before the outbreak of the epidemic, a company of strolling actors was performing at this place a piece called "La Paloma Azul." It was a sort of an extravaganza, in which there was a great deal of bowing, bending, and genuflection. When dengue broke out, a grim resemblance was remarked by some one between the attitudes assumed by the patients writhing in their pain and the bowing, bending, &c., in the play, and so, wanting a name for the disease, they took La Paloma Azul.

The water of the town is supplied by wells, and nearly every house has its own well. They are usually near the house, and often within a few feet of the sinks of the water-closets. The people, as far as I could learn, have no theory that any evil effect is likely to result from this propinquity, though some filter the water they use for drinking purposes. Damiana (*Turnera microphylla*) is an article exported in some quantity from La Paz. The United States consul here, Mr. Turner, vaunts its virtues as a tonic and laxative very highly. It has been used extensively during the last few years as a sexual excitant, but, according to the National Dispensatory, there is not the slightest evidence that it possesses this property. I have prescribed it twice in cases of want of sexual power in otherwise strong men, where I had no reason to believe their disability depended on structural lesions. In one case no benefit at all was obtained, but in the other some improvement was coincident with the use of this medicine. Perhaps any other aromatic tonic might have been equally beneficial. Its use in cases of dymenorrhœa has been attended by beneficial results in many cases. The chief industry of La Paz is fishing, especially pearl-fishing. Fruit of various kinds may be had here, but it is brought from the interior, and is not as good as that obtained further down the coast. Next to malarial diseases on this coast, in point of frequency, comes syphilis. The natives nearly all have it at one time or another.

In the mountainous districts of Nicaragua goitre is very prevalent, and it is often associated with cretinism in all its mental and physical deformity. The popular belief is that the disease is the result of impurities in the drinking-water, according thus with the opinions arrived at by scientific research.

Panama.—We arrived at this port June 24, but we had heard before that yellow fever was prevailing there. As soon as we came to anchor, I went on shore by order of Captain Gillis to investigate the source of these rumors. From inquiry at the consulate, and of several business men whom I met, I received only assurances that no yellow fever at all existed in Panama. I called, however, on three of the four members of the board of health, and received from each a counter assurance that cases of the disease did exist, and that for several weeks there had been no time when the city was perfectly free from it. At this date, twenty-nine cases had come officially under the observation of the board, and it was the opinion of the president, Dr. Guerrero, that other cases had occurred and had been concealed from the authorities. A case in point was that of a gentleman and his wife, late arrivals from Europe. The wife was first attacked by "the fever of the country," as the attending physician designated it, he meaning of course the remittent fever which is so common here. She died. The husband was attacked in turn in the same manner as his wife had been, and his disease was also called "the fever of the country." The case becoming desperate, one of the gentlemen belonging to the board of health was called in consultation,

and found a genuine case of yellow fever, with black vomit. The patient died. I am not charitable enough to believe that two opinions really existed in the intelligent part of the community of Panama as to the presence of yellow fever in the city. Panama exists only by virtue of the travel and traffic across the isthmus, and just at this time it was animated by a lively hope of perpetuating this existence by M. de Lesseps's canal, one end of which it hopes to occupy and own. A good character was therefore necessary for its prosperity, and was given, too, with unblushing assurance, by the whole commercial community. These facts were reported to the department by Captain Gillis at the time, and not deeming it safe to remain here he sailed at once for Callao.

In November last I received a letter from Dr. Guerrero, the abovementioned president of the board of health of Panama, from which I make the following extract relative to the subsequent course of the epidemic at that place:

In the first months of the attack of the yellow fever on the residents of Panama it was so severe that the greater part of the cases had a fatal result; but, little by little, although the cases augmented in number, the intensity of the affection was moderated to the extent that eventually comparatively few serious cases appeared, the greater part ending in recovery. Notwithstanding, I do not believe that the mortality has been less than 25 per cent. of the whole number attacked.

The arrival in this city on July last of 500 troops of the Colombian army suddenly caused an increase of the epidemic, and for some time as many as five or six new cases appeared daily. The whole number of deaths among these troops resulting from the fever did not fall short of fifty, and more than half of the whole force was attacked by it. Yesterday, November 15, 350 more of the Colombian troops arrived here, and I fear this will cause a revival of the epidemic.

The national army is composed of natives of the interior districts, and we have observed that they are as subject to attacks of yellow fever as Europeans, and as the greater part of them have the miasmatic fever which reigns in all these places, it results that the yellow-fever cases thus complicated are more grave and convalescence greatly protracted. In my opinion, tonics and alcoholic stimulants have been most beneficial in these cases. Hemorrhages have complicated the greater part of the cases, and this symptom, together with the uncontrollable vomiting, has given us great and unsatisfactory labor. In all the cases of the genuine yellow fever in which the urine has been examined, we have found albumen more or less abundant. The "coffee grounds" stools and vomit have in nearly every case been the precursors of death.

Between Panama and Guayaquil, a distance of about 750 miles, the Pacific Steam Navigation Company's steamers run weekly, and yellow fever found its way in this course of travel to the latter place in September. It was not, however, regarded as epidemic for a month or more after it first declared its presence. Rumors as to the extent of the epidemic have been very conflicting, some giving the death-rate as high as twenty per day, while others denied that the disease was epidemic to an extent to cause alarm. The following is an extract from an official letter written by the Chilian consul at Guayaquil to the admiral commanding the Chilian blockading squadron on this coast. The date of this letter I could not obtain, but it was written, I think, some time in November:

It is three weeks, more or less, since a malignant fever appeared in this port, which a few of the physicians declared presented symptoms of yellow fever, whilst others denied this grave character to the disease, pronouncing it a pernicious fever and not epidemic. The governor of Guayaquil, four days ago, ordered a consultation on this subject of all the medical men in the city, and it appears that the former opinion prevailed, and there was an almost unanimous recognition of the presence of an epidemic yellow fever. The total number of the victims has reached to some 40 or 50, principally strangers or visitors from the interior. To-day it appears that the disease is on the increase, and is extending to the bay itself and the crews of the foreign vessels. Two, on a German vessel, have already succumbed, and there is another whose death is momentarily expected. Although the mortality from this fever, up to the present time, has not assumed proportions alarming in respect to a population exceed-

ing 25,000, I believe it to be my duty to inform you of this evil in order that, in accord with your honorable colleague, you may take the proper measures in the case, and subject to regulations the vessels and steamers which traffic between Guayaquil and Valparaiso and the intermediate ports.

Lima.—The Dos de Mayo Hospital will compare favorably in its appointments and management with our own first-class hospitals. The wards, &c., are kept scrupulously neat and clean. The surgical and medical staffs are composed of the best talent in Lima.

The building was completed in 1869, and will accommodate comfortably 800 patients. The following statistics relate to the year 1879:

Number of patients remaining from previous year		494
Number of patients admitted during the year		7,927
Total		8,421
There were discharged cured	7,339	
Died	681	
Total		8,020
Remaining at close of year		401

Arica is in latitude 18° 38′ south. The prevailing wind is from the sea, which gives a delicious coolness to the air of the town at nearly all seasons. We lay here through the greater part of the month of October. The town is situated, for the most part, on a plain, raised but a few feet above the sea-level, and is cut off from the sea on the south by a hill (the Morro) that rises some 300 feet above the town. The plain is sandy, and, except near the sea, where there are many springs, is devoid of vegetation. It formerly had a bad name for malarial fevers, but now it enjoys as good a reputation as the average South American towns. At the time of our visit the place was occupied by about 1,500 troops of the Chilian army, among which there was no especially prevailing disease. The place was practically deserted by the Peruvians. Arica is noted chiefly as the point of exit for the products of a large interior district, for earthquakes, for tidal waves, and for its unlimited water supply. Nearly all the coast towns and cities of Peru cry aloud for water and cannot get it, but this has enough for all. North and Jewel Tarapaca Water Company has a control of all the springs here, and furnishes water not only to the town and shipping, but to distant towns on the coast—to Pisagua, Iquique, Pabellon de Pica, Huanillos, and Punta de Lobos—places which have no natural supply, but depend entirely on distilled water and what is sent from this place. The yearly shipments of water to these places by this company amount to about 20,000,000 gallons, at an average price, when delivered, of two and a half cents a gallon. The springs from which this water comes are situated about two hundred yards from the shore of the Bay of Arica, just to the north of the town. There are a number of these springs situated in close proximity, and are made to deliver their water into a cistern of about 100,000 gallons capacity sunk in the ground to a level just below that of the springs. From this cistern the water is pumped and delivered through iron pipes where it is wanted. In quality the water is fairly good. It is of 12° hardness by Clark's scale, has merely a trace of organic matter, and is pleasant and sparkling to the taste.

Tacna is situated in the interior, about forty miles to the north of Arica, at the foot of the Sierras, at an elevation of 560 feet above the sea. Before the present war with Chili it contained about 15,000 inhab-

itants. At the time of my visit, October 7, it was the headquarters of the Chilian army of occupation. There were about 20,000 men encamped in and around the city. The military authorities made every endeavor to keep the city clean and healthy, but owing to the scarcity of water at this season and the large demands on the supply made by the army, the drains could not be properly flushed, and had already become very offensive, promising to be a fertile source of disease. I learned afterwards that this promise was fulfilled by a large increase in the number of dysenteric cases.

The hospital of San Ramon, formerly a civil hospital, is now devoted entirely to military purposes. The building will accommodate comfortably 200 patients, but at present contains 318. These are the most severe cases, the lighter ones being treated in camp. The diseases most prevalent are typhoid fever, pneumonia, intermittent and remittent fevers, and dysentery. The cavalrymen and the men who have charge of horses in the artillery are the ones that suffer most from malarial diseases. It results from encamping in the vicinity of water-courses, where grass and water in plenty can be obtained for the animals. The remainder of the army, encamping at a distance from the streams, on the sandy hills and plains, is comparatively free from these fevers. The percentage of mortality among cases treated at this hospital is about 5 per cent. There were some 30 cases in the surgical ward remaining from the battle in May last. There has been no hospital gangrene at any time, and the mortality among the wounded has been small, leaving out those cases necessarily fatal from the character of the wounds. The climate has much to do with this favorable result. I could obtain no statistics.

REPORT OF SURGEON J. B. PARKER,

U. S. S. WACHUSETT.

Guayaquil.—The following notes contain the information gained from the United States consul and other intelligent foreign residents, regarding the present health and sanitary condition of this notoriously unhealthy city.

There has been no epidemic, but a few cases of yellow fever, or a disease closely resembling it, have occurred during the past few weeks. By way of precaution these cases are isolated as soon as a resemblance to yellow fever is observed. The lazaretto contains about six at the present time. The disease appears sporadic, and the number of cases has not increased. There is but one hospital, and it is spoken of as "wretched;" patients do not voluntarily enter it, preferring to take their chances elsewhere. It is stated that a few among the extremely poor occasionally enter the hospital to avoid the expense attending burial when the case is considered hopeless. There has been no rain for eight months, and recently the heat has been unusually great, the thermometer reaching 82, unusually high for October. The city is overcrowded with refugees from Peru, Chili, and the interior, and is reported as filthy. Recent political agitation has also caused an increase in the small military force usually at hand. To the heat, overcrowding, and absence of sewers or drains of any kind the present disease is ascribed. Officers are allowed to visit the shore for a few hours during the cool of the morning and evening. Washing of clothes on shore is not permitted. Half a cord of kindling wood and the usual fresh supplies for the messes

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The building was completed in 1869, and will accommodate comfortably 300 patients. The following statistics relate to the year 1879:

Number of patients remaining from previous year		491
Number of patients admitted during the year		7,925
Total		8,421
There were discharged cured	7,339	
Died	681	
Total		8,020
Remaining at close of year		401

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U. S. S. WACHUSETT.

Guayaquil.—The following notes contain the information gained from the United States consul and other intelligent foreign residents, regarding the present health and sanitary condition of this notoriously unhealthy city.

There has been no epidemic, but a few cases of yellow fever, or a disease closely resembling it, have occurred during the past few weeks. By way of precaution these cases are isolated as soon as a resemblance to yellow fever is observed. The lazaretto contains about six at the present time. The disease appears sporadic, and the number of cases has not increased. There is but one hospital, and it is spoken of as "wretched;" patients do not voluntarily enter it, preferring to take their chances elsewhere. It is stated that a few among the extremely poor occasionally enter the hospital to avoid the expense attending burial when the case is considered hopeless. There has been no rain for eight months, and recently the heat has been unusually great, the thermometer reaching 82, unusually high for October. The city is overcrowded with refugees from Peru, Chili, and the interior, and is reported as filthy. Recent political agitation has also caused an increase in the small military force usually at hand. To the heat, overcrowding, and absence of sewers or drains of any kind the present disease is ascribed. Officers are allowed to visit the shore for a few hours during the cool of the morning and evening. Washing of clothes on shore is not permitted. Half a cord of kindling wood and the usual fresh supplies for the messes

only are taken on board. There are no sanitary regulations or statistics of any kind relating to disease.

The population of Guayaquil is usually about 15,000, but at the present time it is estimated as high as 30,000. It is built entirely of bamboo cane, a style of building that prevails everywhere along this strip of the Pacific coast, the absence of a suitable clay and water preventing the preparation of air-dried bricks. The dry season begins in June and terminates in November. The heavy rains commence about the latter part of December. March is the rainiest month in the year, and July the coldest. It is at the close of the wet season (May) that fevers most occur. It is said disease is prevented by the countless flocks of buzzards—protected by law—which feed upon decay. During the rainy season, when the air is hot and oppressive, Guayaquil is considered by many one of the most pestiferous spots on the globe.

REPORT OF SURGEON W. G. FAREWELL,

U. S. S. HASSLER.

La Union is situated in the southeastern part of the country, on the Gulf of Fonseca. It contains about 2,500 inhabitants, and is built on rather low ground, with extensive marshes, but a mile or two distant. It naturally suffers from malarial diseases. There are no quarantine regulations, except in extreme cases, nor is there a health officer. There is no hospital nor provision for medical treatment of the indigent poor; the houses of the poor are mere huts; the better ones are of brick, cemented externally.

The principal diseases are syphilis, intermittent and continued fevers, rheumatism, phthisis, typhoid and eruptive fevers. Yellow fever visited this port in 1868, having been imported by a vessel from an infected port. Prostitution is very common, and therefore venereal diseases. More venereal cases were developed from this port among the crew than from any other, and next in order was Mazatlan.

Fresh provisions were obtained and water was also bought, which proved to contain too much organic matter, and was finally rejected for drinking purposes. La Union is considered a healthy port; the majority of the diseases arise from preventable causes, and the poor chiefly suffer. The death-rate is small, but without statistics is merely conjectural. The town has no sewerage and is exceedingly dirty except in the rainy season, when the streets are cleaned by the rain, which extends from July to December.

Acajutta, the next port visited, is an open roadstead, with a safe anchorage only during the winter months. The present is a new site, a couple of miles from the old, on a bluff 50 or 60 feet high; the old port having been abandoned on account of its unhealthy location. There are but a few houses here, and only the people necessary to handle the goods, which are merely in transit. The village is considered very healthy. Water and fresh provisions can be obtained in limited quantities.

Champerico, the next port visited, in the western part of Guatemala, is the outlet of a large coffee-producing country. It is but a village, built on low ground, about 15 to 20 feet above high water. The anchorage is safe only during the winter months. A fine iron wharf furnishes an excellent means of communicating with the shore. It is an

unhealthy town, owing to its location; the inhabitants are afflicted with the diseases common to low lands in the tropics, fevers and intestinal disorders predominating. There is no doctor, and the only medicine that could be obtained was sodium sulphate.

The whole coast life of Central America that we visited is low, covered with rank vegetation, and for several months of the year very wet. During the whole of the year the heat is very great, having a very small range. All the factors for the production of malaria are present at their maximum. The intermittent form of malarial fever readily yields to quinine, which is extensively used, but the remittent form is often fatal; the pernicious form is not often developed, but when it is met with the patient rapidly succumbs to its malignant influence. Dysentery is the chief intestinal disease of adults, and is very fatal; diarrhœa among children is common, and with the very young and poor the mortality is very great. The poor are badly housed and ill fed. The mountains extend the whole length of the coast, at a variable distance of from 20 to 50 miles, thus giving an extensive plain which has but little drainage near the sea. This constitutes the malarial tract. The interior is considered very healthy, and has a fine climate, free from the excessive moisture and heat of the lowlands. The seaport towns are small, nearly all being mere villages, containing enough inhabitants only to handle the good sto and from the vessels. The large towns are all in the interior, where the inhabitants can command more comforts and luxuries. There is but one doctor in La Union, and none between there and Acapulco. The people depend largely upon patent medicines, which are extensively imported from the United States. The chief docters in the inland towns are foreigners, mostly French.

An epidemic of intestinal derangement visited the ship shortly after leaving La Union, characterized by furred tongue, headache, loss of appetite, constipation, accelerated pulse, high-colored urine; in fact, a febrile condition existed; occasionally nausea was present. It was finally attributed to the water obtained at La Union. This water had been tested for salts, and found remarkably pure, much more so than the water distilled on board ship. The taste was not satisfactory, but as it was well recommended, being sold to vessels, the ship filled up with it. As soon as the condition of the crew and officers was traced, the La Union water for drinking purposes was discontinued, and the epidemic was soon afterwards at an end. Since which time water has been distilled on board ship, but not of the best quality.

Acapulco is a town of about 5,000 inhabitants, of whom very few are foreigners. The city is built on low and level ground, at the base of high hills, and though not swampy, is wet in the rainy season. There is no sewerage; buzzards seem to be the only scavengers. This is true of all the towns on this coast. The only high ground is occupied by the fort, built in early times. It serves no purpose now but obstruction.

Intermittent fever, known all along the coast under the name of calentura, is very common, especially toward the close of the wet season and beginning of the dry. Small-pox prevails, very often epidemically. It was raging in the neighboring villages, with a few cases in town, at the time of our visit, and still the authorities ignored its presence, and gave us a clean bill of health. There is no provision for the treatment of the poor sick. A health officer, in name, visits all ships, and exacts a fee of four dollars. Provisions of all kinds can be procured here, and cheaper than elsewhere on the coast. I understood also that good water could be obtained.

Manzanilla is the outlet of a large and rich section of country, but is a

small town of about 1,000 inhabitants. In the dry season it is very unhealthy, owing to the close proximity of lagoons of stagnant water, which, as they become dry, generate malaria. Foreigners suffer greatly from febris intermittens and consequent congestion and enlargement of the liver, and are obliged to retire to the hills almost yearly to recruit their shattered health. The harbor offers a good anchorage, though small, for the largest ships. A railroad is projected to the city of Mexico.

San Blas is a town of about 3,000 inhabitants. It has had an interesting history. Formerly the town, much larger than now, and the first built by the Spaniards on the Pacific, was situated on a high cliff, about a mile from the present site. Some forty years ago it was attacked and pillaged by revolutionists, since which time it has been abandoned. The ruins, from the luxuriant growth of vegetation and rapid decay, have the appearance of being at least two hundred years old. The cathedral and the custom-house are the best preserved, the walls having been very thick. The city is built on a low, sandy plain, and is healthy, except towards the end and immediately after the wet season, when malarial fevers prevail. They attack chiefly the poor, who are badly protected from the wet. The mortality among children is great, being badly cared for; many people, however, live to a great age. The mortality among youths is great, as their health is impaired by excesses of all kinds. I was told that the women greatly outnumber the men. Inflammation of the bowels and lungs is exceeding rare, and consumption also, except associated with syphilis. There is no hospital, but there exists a means by which the poor can obtain medicines and treatment at the expense of the town; but there is so much red tape connected with it that the provision is a dead letter.

Mazatlan is the largest Mexican town on the Pacific coast, having about 10,000 inhabitants, and, including the surrounding villages for some miles, 2,000 or 3,000 additional. It is situated on a low, sandy plain from twenty to fifty feet above the sea; the streets are roughly paved and dirty; the houses are chiefly of brick, covered with cement, and only in the outskirts are there huts. The houses are mostly of one story, with a large court in the interior. This style of building is not well adapted for ventilation.

There are no sewers; surface drainage in the wet season and sweeping the streets at rare intervals in the dry, is the only means of keeping the streets clean. A few of the better houses have private sewers, and the water-closets are emptied at the discretion of the owner. Although there is a health officer, there is no attempt at sanitary inspection. It is the same with quarantine; regulations exist, but they are rarely enforced. If a vessel arrive in port with a case of contagious disease on board, the patient is removed and isolated, but the vessel is permitted to discharge cargo as though she had arrived uninfected. The death-rate could not be obtained accurately, the data being in the hands of the priests, who would not furnish them. The death-rate is supposed to be but little less than the birth-rate, as the increase in population is very slow. Malarial diseases, diarrhœas and dysenteries, and acute phthisis are common. Tetanus is the chief cause of infantile mortality, which attacks the child a few days after birth. I presume this must be cerebro-spinal meningitis, and it seems to be endemic in this part of Mexico. Midwives attend the great majority of labor cases; in fact, it may be said, all cases. They have no training but experience; nevertheless the accidents liable to parturition are extremely rare; deaths from labor are very uncommon, and puerperal fever is said to be unknown. A

more wonderful circumstance still is the fact that diseases peculiar to women, the various malpositions, fistulas, and even ovarian dropsy, are almost unknown. The physician from whom I obtained my information, a very intelligent gentleman who had been some time in London and Paris, made some pertinent remarks on this matter, attributing the freedom of disease in child-bearing women to the absence of the bandage, which is not used in Mexico. The poor class of Mexico is largely composed of Indian blood, and these have little consumption; they are badly housed and clothed, never eat meat, and live exclusively on maize. Phthisis is common among the better and rich classes, but is nearly always of the acute variety, being due to climatic causes and not to changes of temperature, rarely, if ever, originating from a cold. The Indians are said never to have phthisis. Pneumonia is not common, except in cold winters; it is attended with a high rate of mortality. It is said never to terminate in phthisis.

There is a very good hospital at Mazatlan, containing 125 beds, which is usually nearly full. There is but one ward for females, and two for males, and, although they receive venereal cases, all go in together. Of the fifty female patients at the time of my visit, eleven had venereal disease. The hospital, although creditable for the size of the town, is not constructed after the most approved models. It was designed by a local architect, who evidently was not an adept in sanitary science.

The sketch below is a rough outline. The rectangular figure shows the inclosure, about two acres; the irregular figure, inside, the hospital; and the dotted line projected additions, as the future requirement may demand. It is in the extension of the plan that it is most defective.

At present the accommodation for attendants is very limited. There is no house surgeon nor apothecary, but merely a nurse who acts as such; the other nurses are women. There are two attending physicians, who finished their education in Europe. The hospital is well supplied with instruments. There is no operating room, and all operations are at present performed in the dispensary. There are no means for isolating contagious cases, which are put out on the veranda, with merely a screen about the bed. Erysipelas has latterly followed operations quite frequently.

The water supply of the town is from cisterns for drinking, but for washing, &c., from wells. All the water is carried on mules. Owing to the scarcity of water, cleanliness is not regarded as of the highest importance, or one of the prime factors in health, except among the best classes; and even among these, bathing is a luxury indulged in only at long intervals. Late in the dry season water has often to be brought a distance of 18 miles.

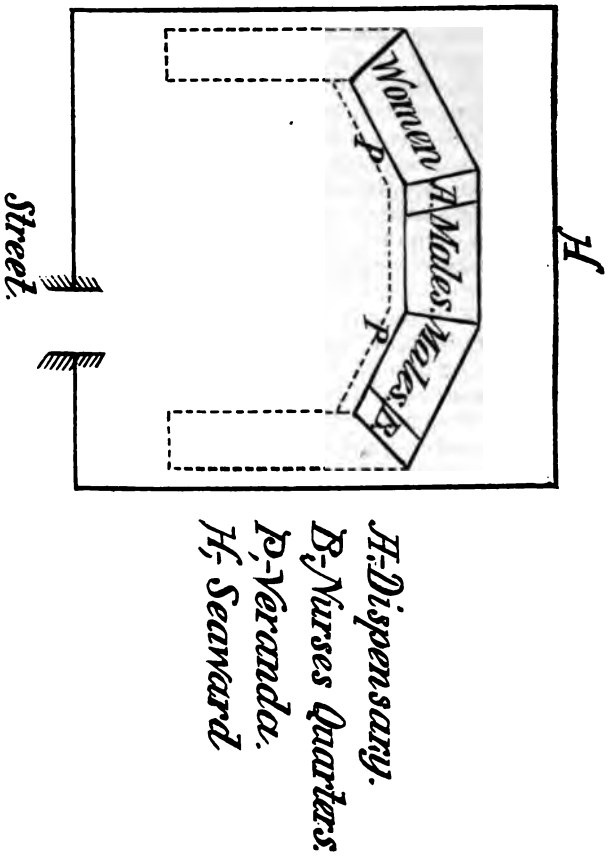
The Mexicans have a great aversion to operations; hence surgery is but little practiced, and operative skill is not high.

Guaymas is a small town of about 5,000 inhabitants, situated on a small but excellent harbor, about 150 miles from Cape San Lucas, up the Gulf of California. The streets are unpaved; the houses are chiefly of brick, and the interior arrangement and economy are similar to that in houses already described. There are a great many huts on the outskirts of the town, occupied by half-breeds. The water is from wells near, and is of very indifferent quality; excellent water is obtained several miles away, but costs three cents a gallon. The town is located on the only level ground about the bay, and is surrounded by high hills. There is but one way through the surrounding mountains into the country. The temperature is unusually high in the summer.

There exists here the merest apology for a hospital, consisting of an

old adobe house of two rooms, one for men and the other for women, with four beds in each. In the treatment of diseases all the virtues of the materia medica are supposed to exist in the sulphate of quinine, and it is given in every case, rheumatism, diarrhœa, infantile intestinal disorders, &c.

The town rarely suffers from epidemics; quarantine, when enforced, only regulates communication by sea, and not by land. The mortality



among adults is small; the chief diseases are phthisis, pneumonia in the winter, diarrhœa, &c.; malarial fevers are not as common as farther south; fevers other than malarial are very rare. The mortality among children is great. The chief diseases are pneumonia in the winter, diarrhœa, cholera infantum, and meningitis; the latter is reported under the head of tetanus.

A railroad is now building from Guaymas to connect with the United States system, which is expected to make this port the chief center of trade on the Pacific coast of Mexico. With the additional impulse this will give from extra money, inhabitants, energy, &c., the town ought to improve in its sanitary condition.

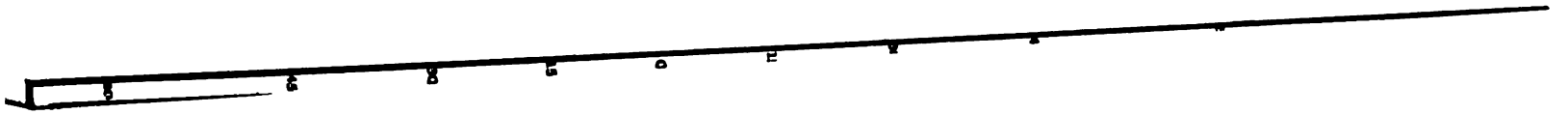
Two seasons are found here as at other points on the coast, the wet and hot in the summer and the dry and cold in the winter. The temperature is high in summer from the configuration of the land. In winter the mercury sometimes reaches 40° F. at night, but the temperature is pleasant in the day-time. Semi-tropical fruits are abundant.

The coast from Guaymas to the head of the gulf, about 250 miles, is perfectly barren, the mountains coming down to the shore, forming precipitous cliffs, at other places receding to some distance, the interval being low sandy plains.

La Paz is a town of about 2,500 inhabitants, situated on a bay of the same name, toward the lower end of the peninsula. Its streets are unpaved, and the same conditions prevail here as to sanitary measures as at other Mexican towns of this size. It is considered very healthy, but the town is decreasing in population, owing to emigration. Good facilities for drainage exist, but there are no sewers, and consequently here, as elsewhere in Mexico, the nose is constantly offended with the odor of urinal and fæcal evacuations. The wonder is that every Mexican town is not ravaged with typhoid fever. There is no hospital, and no provision is made for the medical attendance of the poor. About four years ago an epidemic of small-pox carried off about twenty-five per cent. of the population. The distress and misery were terrible; the people died faster than they could be buried; many received no medical attention whatever; but few of the people had been vaccinated. Among the various diseases that are almost unknown in Mexico, and which are common in the United States, are typhoid fever, rickets, and stone in the bladder. It is remarkable, owing to the insanitary condition of the towns, that there is no typhoid fever. The absence of stone in the bladder is explained by the circumstance that most of the people drink rain-water; and rickets, because the poor live on unbolted corn-meal, coarsely ground, which furnishes abundance of bone-making material.

There are two schools of medicine in Mexico, one at the capital and the other at Guadalaxara. The professors are nearly all foreigners, mostly German. The graduates who can afford the expense visit Europe, London and Paris, chiefly to attend the practice in the large hospitals. There are schools also in Central America, but a visit to Europe is considered necessary to a finished education.

There are but two seasons on the Pacific coast, from San Francisco to Panama, the wet and the dry. In Mexico and Central America the summer is wet and the winter dry; along the California coast the contrary prevails. The prevailing winds change with the season; the northwest winds are attended with dry weather, and southerly winds with wet weather. The temperature varies with the latitude; along the whole coast it is very hot in the summer, ranging in the nineties in the day-time, and is still hot in the winter below Acapulco. At Acapulco and north the climate is delightful, in the winter the temperature ranging from 60° F. to 75° F. in the day, and from 45° to 60° F. at night. The lowest temperature we experienced, 33° F., was at the mouth of the Colorado River, in latitude 31° 43′. During winter, when the northwest winds prevail, rheumatism is common; it is very rare in summer. It is possible that this disease may depend on the electrical condition of the atmosphere. The air is dry and cool. A very interesting question arises as to the physical causes of the marked dry and wet seasons along the whole Pacific coast that we have visited. As far south as San Diego, and about 100 miles beyond, the summers are dry and the winters are wet; the prevailing winds are northwest in the former, and south, varying to the west and east, in the latter season; the rain comes from the southeast. From San Diego south, with no especially noticeable change in the character of the country, the seasons and winds are exactly reversed. The climate of the southern part of California, including the great health resorts of Santa Barbara, Los Angeles, and San Diego, has been specially investigated by a commission appointed, at the request of the State legislature, from the members of the State board of health, to report upon the most desirable *points to* erect State hospitals for consumptives.



SANITARY CONDITION

OF THE

EUROPEAN STATION.

EUROPEAN SQUADRON.

The force employed in the European squadron during the year 1880 consisted of five vessels, two less than the previous year: the Trenton, second rate, used as a flag-ship; the Quinnebaug, third rate; the Wyoming, third rate; the Enterprise, third rate; and the Nipsic, third rate. The Trenton served 366 days on the station, the Quinnebaug 366, the Wyoming 366, the Enterprise, 141, and the Nipsic 275 days. The strength of the squadron was 1,276, or, corrected for time, 1,120, a slight decrease from the preceding year.

The total number of admissions, including those remaining from last year, amounted to ..... 1,452 = Per M. 1,296.42

Discharged, cured		1,365 =	1,218.75
Invalided	to hospital	43 =	38.39
	from service	9 =	8.03
Died		3 =	2.67
Continued		32 =	28.57

Compared with the previous year, there was a reduction in the sick-rate of 369.48 per M, in the invaliding of 27.38 per M, and in the death-rate of 1.33 per M.

The sick-rate in the English squadron for the year 1880 was 1,178.93 per M, the invaliding-rate was 29.35 per M, the death-rate 11 per M, and the daily average number of sick 40.38 per M, while in the Prussian squadron the sick-rate was only 1,130 per M, the daily average number of sick 25.6 per M, and the average duration of treatment 8.3 days.*

The number of sick-days, or the time lost to the service, amounted to 11,581. The daily average number of sick was: Absolute, 31.64; relative, 28.25. The average number of days under treatment was 7.47.

As compared with the previous year there was a decrease in loss of time to the extent of 6,246 days; in the daily sick, of 8.79 per M; and in the duration of treatment, of .71 of a day.

The daily average loss of service was distributed among the various classes of diseases in the following ratio per M:

	1879.	1880.
General diseases:		
Zymotic	1.07	2.51
Constitutional	8.11	3.16
Local diseases:		
Diseases of the nervous system	1.46	1.00
Diseases of the eye	.47	.43
Diseases of the ear		.08
Diseases of the teeth	.38	.01
Diseases of the circulatory system		.14
Diseases of the absorbent system		1.32
Diseases of the respiratory system	3.95	3.56

*These figures would seem to show a better sanitary condition of these two foreign services than our own, but this is only apparent. The medical officers of our Navy record all cases, however slight, involving a relief from duty, which is not done in foreign navies. Were the sick grouped as *Schonungskrank* included in the above average in the Prussian service, the sick-rate would be 1,600 instead of 1,130 per M.

	1879.	1880.
Diseases of the digestive system	4.43	2.84
Diseases of the genito-urinary system	5.81	3.67
Diseases of the locomotive system	.18	.08
Diseases of the integumentary system	5.36	3.27
Non-malignant tumors	.12	.05
Poisons	.33	.19
Voilent diseases and injuries	5.98	5.83

The sick-rate of the different ships in this squadron, arranged in numerical order, stands as follows:

	Per M.
Trenton	480.35
Quinnebaug	260.71
Nipsic	246.42
Wyoming	212.50
Enterprise	96.42

The 52 cases invalided were distributed among the succeeding groups:

General diseases:	Per M
Zymotic	6 = 5.35
Constitutional	9 = 8.03
Local diseases:	
Diseases of the nervous system	5 = 4.46
Diseases of the ear	1 = .89
Diseases of the circulatory system	2 = 1.78
Diseases of the absorbent system	1 = .89
Diseases of the respiratory system	15 = 13.39
Diseases of the digestive system	2 = 1.78
Diseases of the genito-urinary system	2 = 1.78
Diseases of the integumentary system	1 = .89
Diseases from violence	8 = 7.14

Of these, there were 10 from the Trenton, 19 from the Quinnebaug, 1 from the Nipsic, 11 from the Wyoming, and 11 from the Enterprise. Of the 3 cases of death, 2 were furnished by the Trenton, and 1 by the Nipsic. One was from concussion of the brain, 1 from apoplexy, and 1 from pneumonia.

GENERAL DISEASES.

ZYMOTIC CROUP.

The number of diseases falling under this division amounted to 159, being in the ratio of 141.96 per M, a diminution from the previous year of 12.12 per M. The ratio per M of the cases treated in this class is as follows: On the Trenton, 56.25; on the Quinnebaug, 40.17; on the Wyoming, 32.92; on the Enterprise, 8.03; and on the Nipsic, 3.57. They were erysipelas, 3; febris continua simplex, 15; febris intermittens, 123; vaccina, 15; variola, 1; varioloides, 2. The number invalided was 3, a ratio of 2.67 per M, and there were no deaths.

Erysipelas.—This disease furnished a ratio of 2.67 per M, a decrease from that of last year. Of the three cases reported, 2 occurred on the Trenton and 1 on the Enterprise. All were returned to duty.

Febris intermittens.—One hundred and twenty-three cases of this disease were reported, furnishing a ratio per M of 109.82, a decrease of 6.16 per M from that of last year. They contributed 857 sick-days, the daily average being 2.08, and the average duration of treatment 6.96 days. Three were invalided from the service, a ratio of 2.67 per M. The largest number of the malarial cases occurred on the Trenton, which had 42; next on the Wyoming, 37; the Quinnebaug, 34; and the remainder were distributed among the other vessels.

Vaccina.—There were 15 persons reported disabled by this cause, a ratio of 13.39 per M, or nearly double that of the preceding year. All these cases occurred on the Trenton and Quinnebaug. The following table will show the entire number of vaccinations in the squadron, and the results obtained:

Ship.	Presenting evidence of small-pox.		Presenting evidence of previous vaccination.		No evidence of previous vaccination.		Total.
	Successful.	Unsuccessful.	Successful.	Unsuccessful.	Successful.	Unsuccessful.	
Galena	0	0	0	5	0	14	19
Nipsic	6	16	44	113	4	7	190
Quinnebaug	0	4	2	14	0	7	27
Wyoming	0	0	3	20	0	0	23
Total	6	20	49	152	4	28	259
Per cent. of cases	10.0		77.6		12.4		
Per cent. of successful	23.3		32.2		14.2		22.8

Variola.—One case of small-pox appeared on board the Wyoming, and was sent to hospital. It occurred in a sailor, a native of Manila, who was on shore at Naples from February 5 to February 8, returning on the latter date. As small-pox was prevalent at the various Italian ports to a greater or less extent at this time, it is probable that he was exposed to the disease during his leave. On the 23d an eruption appeared, after three or four days of malaise, which presented all the appearances of small-pox, and he was transferred on the following day to the hospital for treatment of that disease, where he recovered. No other cases appeared on the ship.

Varioloides.—Two cases occurred on the Quinnebaug, the continuation of an epidemic which broke out on that ship toward the close of last year.

CONSTITUTIONAL DISEASES.

There fell, among these affections, 114 cases, a ratio of 101.78 per M, a decrease of 119.63 per M. The number invalided to hospital was 9, and none from the service. The cases were grouped as follows: Adynamia, 6; hydrops, 1; acute rheumatism, 47; chronic rheumatism, 28; sciatica, 1; primary syphilis, 13; secondary syphilis, 18. There were on the Trenton, 33.92; Quinnebaug, 25; Nipsic, 18.75; Wyoming, 16.07; and the Enterprise, 8.03 per M.

Adynamia.—Last year the sick-rate was 24.3 per M; this year it was but 5.35 per M; a remarkable decrease.

Rheumatism.—Diseases of this class furnished 69.96 per M, a decrease of 40.14 per M from the preceding year. There were none lost to the service. The total number of sick-days was only 475, against 1,065 for last year. The largest number (31) occurred on the Trenton, next (15) on the Quinnebaug; 14 occurred on the Nipsic, 13 on the Wyoming, and 2 on the Enterprise.

Syphilis.—Syphilitic affections contributed 27.67 per M, viz, 11.6 per M of primary and 16.07 per M of secondary affections; a decrease of 57.73 from the previous year. The time lost was 672 days, against 2,040 in 1879. There were none invalided, and none died. The average length of treatment for the primary affection was 28.67 days, and for the secondary 16.61 days. The average number of men sick daily from these diseases

was 1.52. The largest number occurred on the Quinnebaug, which had 9 cases; the Trenton, Nipsic, and Enterprise each had 6.

LOCAL DISEASES.

The diseases grouped under this heading were upwards of fivefold more numerous than those classed as general diseases. Last year the proportion was four and a half more.

DISEASES OF THE NERVOUS SYSTEM.

The number falling under this head was 76, a ratio of 67.85 per M, an increase of 25.25 per M over that of the previous year. There was invalided from the service but 1, giving the small ratio of .89 per M, and 1 died, with the same ratio. The diseases were grouped under the following heads: Apoplexia, 1; cephalalgia, 27; dementia, 1; epilepsia, 5; insolatio, 2; melancholia, 2; nausea marina, 1; neuralgia, 31; paralysis, 1; pleurodynia, 5. It is thus seen that the preponderating affections were neuralgia, cephalalgia, epilepsia and pleurodynia. They were distributed among the vessels in order of frequency as follows: Nipsic, 26; Trenton, 24; Quinnebaug, 18; Wyoming, 7; Enterprise, 1.

Apoplexia.—There was 1 case reported from the Trenton, which proved fatal.

Cephalalgia.—This disease furnished a sick ratio of 24.10 per M, the next highest in the group. There was a loss of 68 days' service, less than half that of the previous year. The average number of days under treatment was 2.51. The Nipsic supplied by far the largest contingent, or 17 cases, and the Quinnebaug gave 7.

Dementia.—There was but 1 case of this affection, which occurred on the Trenton, and recovered. Last year gave 7 cases, with a ratio of 1.69 per M, while that of this year is but .89 per M.

Epilepsia.—There were 5 cases recorded, or 4.46 per M less than last year, and 1 was invalided from the service. Two cases happened severally upon the Quinnebaug and Wyoming, and the fifth on the Nipsic.

Insolatio.—Two cases were reported (1.78 per M); both occurred on the Trenton, and recovered.

Melancholia.—Two cases were returned (1.78 per M); 1 of these happened on the Quinnebaug, and 1 on the Enterprise.

Neuralgia.—There were reported 31 cases of neuralgia, or 27.67 per M, a decrease of 9.53 per M from the preceding year. More than one-half (16) occurred on the Trenton; and there were, on the Nipsic, 10; on the Quinnebaug, 5, and on the Wyoming, 4.

Paralysis.—One case was reported as occurring on the Quinnebaug; invalided to hospital.

Pleurodynia.—Of this disease 5 cases were noted, or 4.46 per M; all of them were returned to duty.

DISEASES OF THE EYE.

This group supplied 13 cases, a ratio of 11.60 per M, and a decrease of one-half from the preceding year. They were as follows: Conjunctivitis, 6.25 per M; iritis, 2.67; keratitis, 1.78, and ophthalmia .89 per M. The cases were pretty evenly distributed among the various vessels, the Enterprise excepted, which reported but a single case. The most frequent form of eye disease under marine conditions is conjunctivitis.

DISEASES OF THE EAR.

There were only 4 cases of ear diseases reported (3.57 per M), a small increase over last year. They were, otorrhœa, 3, and otitis 1.

DISEASES OF THE TEETH.

Four cases of odontalgia were recorded (4.46 per M); they occurred on the Trenton and Quinnebaug.

DISEASES OF THE CIRCULATORY SYSTEM.

Seven cases fell under this class, or 6.25 per M, a slight decrease from 1879. They were, hypertrophia, 3; palpitatio, 3; syncope, 1. Four of the number (3.57 per M) occurred on the Trenton; 2 (1.78 per M), on the Quinnebaug, and 1 (.89 per M), on the Nipsic; 1 case of palpitatio, occurring on board the Quinnebaug, was invalided from the service.

DISEASES OF THE ABSORBENT SYSTEM.

Twenty-two cases of the single disease, adenitis, were recorded under this class, giving a ratio of 19.64 per M. They were distributed as follows: 13, or 11.60 per M, on the Trenton; 5, or 4.46 per M, on the Quinnebaug, and 1, or .89 per M, on the Enterprise and Nipsic, respectively. The loss of service from this affection amounted to 545 days, being an average of 24.77 days for each case. Although there was a small decrease in the number of cases from last year, the loss of service was greater by nearly 100 days.

DISEASES OF THE RESPIRATORY SYSTEM.

An aggregate of 212 cases, a ratio of 189.28 per M, were recorded under this group of diseases. The loss of service which resulted was 1,462 days, an average of nearly 1 per day, and the average duration of each case was 6.89 days. The largest number occurred on the Nipsic, which reported 71 cases, or 63.39 per M. On the Trenton there were 61 cases (54.46 per M); on the Enterprise there were 28 cases (25 per M); on the Quinnebaug, 27 cases (24.10 per M), and on the Wyoming, 25 cases (22.31 per M). There was 1 death; 3 were invalided from the service, and 12 to hospital.

Asthma.—Two cases of this affection were returned, 1 from the Trenton and 1 from the Wyoming.

Bronchitis.—Of this disease 50 cases in all were reported, 44 of the acute form, and 6 of the chronic. The ratio per M given by these numbers was 44.64, a decrease of 4.83 from last year. The number of sick-days from the acute and chronic varieties was 427, and the largest number of cases occurred on the Wyoming, which afforded 20. There were 14 on the Trenton, 12 on the Enterprise, and a very small percentage on the Nipsic and Quinnebaug.

Catarrhus.—Of this affection there were 141 cases, or 125.99 per M, causing the largest loss of service of any disease in the class, viz, 557 days. Sixty-eight cases occurred on the Nipsic, 41 on the Trenton, 18 on the Quinnebaug, and 13 on the Enterprise. There was an increase of this disease of 27 per M over the ratio of last year.

Hemoptysis.—Three cases were noted under this head (2.67 per M); 2 occurred on the Quinnebaug and 2 on the Trenton.

Phthisis pneumonica chronica.—There were 7 cases of this affection in

the squadron (6.25 per M), and an increase of 1.39 over the ratio of last year. No cases were reported, however, of the acute form, of which there was 1 in 1879. Two of the cases occurred on the Enterprise, which were invalided to hospital; 4 on the Quinnebaug, 2 of which were invalided to hospital and 1 from the service, and 1 on the Trenton, invalided to hospital.

Pleuritis.—One case occurred on the Nipsic and 2 on the Wyoming, 3 in all, or 2.67 per M, an increase of 50 per cent. over last year. Two of these were invalided from the service. The loss was 88 days.

Pneumonia.—Of this affection 6 cases were returned, 5.35 per M, one-half the ratio of last year. The resulting loss of service was 132 days, an average of 22 days for each case. Three cases occurred on the Trenton, 1 of which resulted in death; and there was 1 case on the Enterprise, Nipsic, and Wyoming, respectively.

DISEASES OF THE DIGESTIVE SYSTEM.

Of the various disorders coming within this class there were reported 272 cases, a ratio per M of 242.85; quite a marked falling off from that of last year, the difference amounting to 121.12 per M. The loss of service amounted to 1,146 days, or 4.21 per man. The following ratios exhibit the distribution of these diseases among the vessels of the fleet: Trenton, 76.78 per M; Nipsic, 58.92 per M; Wyoming, 43.75 per M; Quinnebaug, 35.71 per M; Enterprise, 27.67 per M. The principal factors making up the class were: Cholera morbus, 22 cases; colica, 18; diarrhœa acuta, 130; dyspepsia, 13; hemorrhoids, 7; icterus, 14; pharyngitis, 10; tonsilitis, 42.

Cholera morbus.—In this disease there was a decrease of 6.67 per M. Nearly one-half the cases (10) occurred on the Wyoming, and none were reported from the Nipsic; the other ships had about an equal proportion.

Colica.—Of the 18 cases of this disorder 11, or more than one-half, occurred on the Trenton; the Nipsic had but 1, and an equal number (2) fell on the other vessels. The decrease in this affection from the ratio of last year was 7.44 per M.

Constipatio.—But 3 cases, a ratio of 2.67, were noted of this affection, a remarkable falling off from the number (85) of last year, the difference being expressed by a ratio of 66.28 per M.

Diarrhœa acuta.—This disease presents nearly the same ratio as last year, the difference being a small decrease of 1.72 per M. The largest number occurred on the Nipsic, which afforded 51 cases; there were 12 on the Trenton, 13 on the Wyoming and Quinnebaug, respectively, and 11 on the Enterprise. This disease contributed 522 sick days, about one-half the entire loss of service caused by the group.

Dyspepsia.—There was a considerable decrease also in this affection, 13 cases, a ratio of 11.60 per M, being reported, a diminution of 21 cases, or 15.97 per M. The largest proportion (5) was on the Wyoming; there were 4 on the Quinnebaug, and 3 on the Enterprise; the Nipsic had none, and the Trenton but 1.

The Quinnebaug contributed 2 cases of enteritis and 1 of gastritis, the only ones in the squadron. The single cases of hæmatemesis and hernia were reported from the Wyoming, and that of acute hepatitis from the Quinnebaug.

Icterus.—There was a small increase of this affection of 3.58 per M, or 3 cases. Nearly two-thirds of the 14 cases, or 9, occurred on the Quinnebaug; the Trenton and the Wyoming each had 2, and the Enterprise 1.

Pharyngitis.—Ten cases, the same number as in 1879, occurred, and they were mostly on the Wyoming.

Tonsilitis.—Forty-two cases, giving a ratio of 37.50 per M, were recorded under this head. These numbers indicate a decrease from the returns of 1879 of 29 cases, and a ratio of 20 per M. The larger proportion of the cases (19) occurred on the Trenton; there were 9 on the Nipsic, 7 on the Enterprise, 4 on the Quinnebaug, and 3 on the Wyoming. The loss of service amounted to 179 days, or 4.26 days per case.

DISEASES OF THE GENITO-URINARY SYSTEM.

Under this head were tabulated 109 cases, giving a ratio of 97.32 per M. The decrease from the number reported in 1879 amounts to 72 cases, or a ratio of 58.76 per M. The resultant loss of service was 1,510 days, or 13.85 per man, a much larger average than last year, when it was but 3 days for each case. Nearly one-half the cases, or 51, occurred on the Trenton; 23 were reported from the Quinnebaug, 17 from the Nipsic, 14 from the Wyoming, and but 4 from the Enterprise. The following are the principal affections noted: Albuminuria, 2; chancroides, 33; cystitis and strictura urethræ, of each, 2; gonnorrhœa, 72; orchitis, 23; phymosis, 3; and single cases of enuresis, epidydimitis, hæmaturia and nephritis.

Albuminuria.—Of this affection there were no cases reported in 1879. The two cases of this year occurred on the Quinnebaug and Wyoming, and both were invalided.

Chancroides.—Thirty-three cases, very nearly the number of last year (36), were reported of this affection. Of this number 28 belonged to the Trenton and 5 to the Quinnebaug. None were reported from the other ships. The loss of service was 485 days, an average of 14.69 days for each case.

Cystitis.—The two cases reported occurred on the vessels mentioned last, and that of the Quinnebaug was invalided to hospital.

Gonnorrhœa.—The 32 cases of this disease are proportionately divided among the several vessels of the squadron, and gave a ratio of 28.57 per M. A decrease of 50 cases, or 37.93 per M, from the number of last year is shown; a very remarkable reduction. The loss of service amounted to 372 days, an average of 19 days for each case, a loss of nearly two-thirds less than that of 1879.

Orchitis.—Twenty-five cases of this disease were returned, a ratio of 22.32 per M. Of these 5 occurred on the Wyoming, 3 on the Trenton, 4 on the Quinnebaug, 11 on the Nipsic, and 2 on the Enterprise. The reduction in the number of cases of this affection was also very marked. Last year there were 69 cases, so that the decrease was 14 cases, or 9.3 per M. The loss of service was 350 days, one-third less than last year, the average duration of treatment being 14 days.

Urethræ strictura.—This affection, which afforded last year 7 cases, with a ratio of 5.67 per M, gave in 1880 but 2 cases, or 1 78 per M, a difference of 3.89 per M. They occurred on the Quinnebaug and Wyoming, and caused only a loss to the service of $\frac{2}{10}$ day.

DISEASES OF THE LOCOMOTIVE SYSTEM.

There was but one case reported under this head, which was one of synovitis, occurring on the Wyoming. This class of diseases gave last year an aggregate of 12 cases.

DISEASES OF THE INTEGUMENTARY SYSTEM.

The total number of cases reported in this class was 163, a ratio of 145.53 per M, a decrease of 52 cases, or 47.76 per M. The cases were

pretty equally distributed among the vessels of the fleet, in proportion to the number of the crew and length of service. The predominating affections were, of course, furunculus 74 cases, abscessus 52 cases, and eczema 11 cases. These constituted about two thirds of the whole number, and the remainder were the usual incidental affections of this class. The loss of service was 1,346 days.

NON-MALIGNANT TUMORS AND CYSTS.

This group gave but 4 cases, which were single ones of cystis, fibroma, lipoma, and sarcoma. The number reported in 1879 was 7, indicating a decrease for this year of about 1 per M. The cases were all returned to duty.

POISONS.

There were 34 cases of this character, a ratio of 30.35, of which 32 were of alcoholismus, and 2 of delirium tremens. By far the largest number of cases of alcoholism took place on the Trenton, which reported 22, and there were six on the Quinnebaug, and 4 on the Enterprise. The 2 cases of delirium tremens occurred on the Nipsic. The Wyoming reported no cases under this head. The loss of service amounted to 84 days, about one-half that of last year. The number of cases of alcoholic poisoning reported in 1879 was 49, so that the decrease was 15 cases.

DISEASES RESULTING FROM VIOLENCE.

The aggregate of these cases was 257, a ratio of 229.46 per M, and a decrease from last year of 70 cases, or 35.74 per M. Eight cases, mostly of fractures, were invalided to hospital, and one died. The remainder were returned to duty. The loss of service was 2,391 days, a little over 9 per case. The death reported was from concussio cerebri, and occurred on the Nipsic. The distribution of the cases among the vessels of the fleet was as follows: Trenton, 102 cases, 91 per M; Quinnebaug, 59 cases, 52.67 per M; Wyoming, 46 cases, 41 per M; Nipsic, 38 cases, 30.92 per M; Enterprise, 12 cases, 10.71 per M. The predominating affections reported under this class were those which prevail most extensively on board ship, contusions and contused wounds, sprains, and the several varieties of wounds.

TABLE I.—*Showing the force on each ship, the number admitted and discharged, number of days under treatment, and average per M of force on the European Station.*

Vessels.	Strength.	Strength corrected for time.	Admitted.						Discharged.				Continued.	Number of sick-days.	Average number of days under treatment.	Daily average number of sick.		Number admitted per M of strength.
			From last year.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.	Cured.	Invalided.	Died.	Total.				Absolute.	Per M of strength.	
1. Enterprise, 3d rate, 615 tons; wood, screw; service 141 days	176	67	4	75	29	.....	.....	108	97	11	....	108	....	890	8.24	6.31	5.03	96.42
2. Nipsic,* 3d rate, 695 tons; wood, screw; service 275 days	186	139	.....	.....	77	97	102	276	267	1	1	269	7	1,782	6.45	6.45	5.75	246.42
3. Trenton, 2d rate, 2,300 tons; wood, screw; service 366 days	477	477	19	138	136	112	133	538	510	10	2	522	16	4,706	8.74	12.86	11.48	480.35
4. Quinnebaug, 3d rate, 910 tons; wood, screw; service 366 days	230	230	6	83	69	75	59	292	270	19	....	289	3	2,371	8.11	6.47	5.77	260.71
5. Wyoming, 3d rate, 726 tons; wood, screw; service, 366 days	207	207	6	57	62	61	52	238	221	11	....	232	6	1,832	7.69	5.00	4.46	212.05
Total	1,276	1,120	35	353	373	345	346	1,452	1,365	52	3	1,420	32	11,581	7.97	31.64	28.25	1,296.42

* The Nipsic was on the North Atlantic Station during the first quarter, 1880, and the 77 cases admitted during the second quarter include 11 cases remaining from the first quarter.

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Diseases and injuries.	Enterprise.				Nipsic.				Quinnebaug.				Trenton.				Wyoming.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES—Continued.																								
2.—*Constitutional diseases*—Continued.																								
Syphilis primitiva	3				5				3								2				13			
Syphilis consecutiva	3	1			1				6	2			6				2				18	3		
Aggregate	9	2			21				28	5			38	2			18				114	9		
Rate per M	8.03	1.78			18.75				25	4.46			33.92	1.78			16.07				101.78	8.03		
Number of sick-days	149				285				306				357				205				1,302			
Average number sick daily	1.05				1.03				.83				.97				.56				.85			
Average number sick daily per M	.93				.91				.74				.86				.50				.75			
Average duration of treatment	16.55				13.57				10.92				9.39				11.38				11.42			
LOCAL DISEASES.																								
1.—*Diseases of the nervous system.*																								
Apoplexia													1				1				1			1
Cephalalgia					17				7				2				1				27			
Dementia													1								1			
Epilepsia					1				2	1							2				5	1	1	
Insolatio													2								2			
Melancholia	1	1							1	1											2	2		
Nausea marina					1																1			
Neuralgia					6				5				16				4				31			

Insolatio	2	1.78	10	.02	.01	5	2	1.78								
Melancholia	2	1.78	77	.21	.18	38.5			2	1.78						
Nausea marina	1	.89	1			1	1	.89								
Neuralgia	31	27.67	116	.31	.27	3.74	31	27.67								
Paralysis	1	.89	22	.06	.05	22			1	.89						
Pleurodynia	5	4.46	25	.06	.05	5	5	4.46								
Aggregate	76	67.85	415	1.13	1.00	5.46	70	62.50	4	3.57	1	.89	1	.89		
2.—Diseases of the eye.																
Conjunctivitis	7	6.25	108	.29	.25	15.42	7	6.35								
Iritis	3	2.67	10	.05	.04	6.33	3	2.67								
Keratitis	2	1.78	31	.08	.07	15.5	1	.89								1
Ophthalmia	1	.89	1			1	1	.89								
Aggregate	13	11.60	159	.43	.38	12.23	12	10.71								1
3.—Diseases of the ear.																
Otitis	1	.89	18	.04	.03	18			1	.89						
Otorrhœa	3	2.67	15	.04	.03	5	3	2.67								
Aggregate	4	3.57	33	.09	.08	8.25	3	2.67	1	.89						
4.—Diseases of the teeth.																
Odontalgia	5	4.46	9	.02	.01	1.8	5	4.46								
5.—Diseases of the circulatory system.																
Hypertrophia cordis	3	2.67	24	.06	.05	8	2	1.78	1	.89						
Palpitatio	3	2.67	31	.08	.07	10.33	2	1.78			1	.89				
Syncope	1	.89	7	.01		7	1	.89								
Aggregate	7	6.25	62	.16	.14	8.85	5	4.46	1	.89	1	.89				
6.—Diseases of the absorbent system.																
Adenitis	22	19.64	545	1.48		24.77	19	16.96	1	.89						
7.—Diseases of the respiratory system.																
Asthma	2	1.78	6	.01		3	2	1.78								
Bronchitis acuta	44	39.29	329	.87	.77	7.47	43	38.30	1	.89						
Bronchitis chronica	6	5.35	98	.26	.23	16.33	4	3.57	2	1.78						
Catarrhus	141	125.99	557	1.52	1.35	3.95	139	124.10								2
Hæmoptysis	3	2.67	54	.14	.12	18	1	.89	2	1.78						
Phthisis pneumonica chronica	7	6.25	198	.51	.45	28.28	1	.89	5	4.46	1	.89				
Pleuritis	3	2.67	88	.24	.21	29.33	1	.89			2	1.78				
Pneumonia	6	5.35	132	.36	.32	22	3	2.67	2	1.78			1	.89		
Aggregate	212	199.28	1,462	3.99	3.56	6.89	194	173.21	12	10.71	3	2.67	1	.89	2	

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Diseases and injuries.	Enterprise.				Nipsic.				Quinnebaug.				Trenton.				Wyoming.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																								
4.—*Diseases of the teeth.*																								
Odontalgia	1				2				2												5			
Aggregate	1				2				2												5			
Ratio per M	.89				1.78				1.78												4.46			
Number of sick-days	1				5				3												9			
Average number sick daily					.01																			
Average number sick daily per M																								
Average duration of treatment	1				3.5				1.5												1.8			
5.—*Diseases of the circulatory system.*																								
Hypertrophia cordis													3	1							3	1		
Palpitatio									2		1		1								3		1	
Syncope					1																1			
Aggregate					1				2		1		4	1							7	1	1	
Ratio per M					.89				1.78		.89		3.57	.89							6.25	.89	.89	
Number of sick-days					7				29				26								62			
Average number sick daily					.01				.07				.07								.04			

Nephritis	1	.89	7	.01	.....	7	1	.89	.....	.....	.....	.....	.....	.....	.....
Orchitis	25	22.32	350	.95	.84	14	25	22.32	.....	.....	.....	.....	.....	.....	.....
Phymosis	3	2.67	39	.10	.08	13	3	2.67	.....	.....	.....	.....	.....	.....	.....
Urethræ strictura	2	1.78	10	.02	.01	5	2	1.78	.....	.....	.....	.....	.....	.....	.....
Aggregate	109	97.32	1,510	4.12	3.67	13.85	98	87.50	2	1.78	.....	.....	.....	.....	9
10.—Diseases of the locomotive system.															
Synovitis	1	.89	33	.09	.08	33	1	.89	.....	.....	.....	.....	.....	.....	.....
11.—Diseases of the integumentary system.															
Abscessus	52	46.42	594	1.62	1.44	11.42	52	46.42	.....	.....	.....	.....	.....	.....	.....
Acne	2	1.78	16	.04	.03	8	2	1.78	.....	.....	.....	.....	.....	.....	.....
Cellulitis	1	.89	5	.01	.....	5	1	.89	.....	.....	.....	.....	.....	.....	.....
Eczema	11	9.82	114	.31	.27	10.36	9	8.03	.....	.....	1	.89	...	.....	1
Erythema	4	3.57	9	.02	.01	2.25	4	3.57	.....	.....	.....	.....	.....	.....	.....
Furunculus	74	66.07	406	1.10	.98	5.48	73	65.18	.....	.....	.....	.....	.....	.....	1
Herpes	2	1.78	6	.01	.....	3	2	1.78	.....	.....	.....	.....	.....	.....	.....
Onychia	1	.89	6	.01	.....	6	1	.89	.....	.....	.....	.....	.....	.....	.....
Paronychia	7	6.25	155	.42	.37	22.14	7	6.25	.....	.....	.....	.....	.....	.....	.....
Tinea	4	3.57	9	.02	.01	2.25	4	3.57	.....	.....	.....	.....	.....	.....	.....
Ulcus	4	3.57	19	.05	.04	4.75	4	3.57	.....	.....	.....	.....	.....	.....	.....
Verrucæ	1	.89	7	.01	.....	7	1	.89	.....	.....	.....	.....	.....	.....	.....
Aggregate	163	145.53	1,346	3.67	3.27	8.25	160	142.85	.....	.....	1	.89	...	.....	2
Poisons.															
Alcoholismus	32	28.57	78	.21	.18	2.43	32	28.57	.....	.....	.....	.....	.....	.....	.....
Delirium tremens	2	1.78	6	.01	.....	3	2	1.78	.....	.....	.....	.....	.....	.....	.....
Aggregate	34	30.35	84	.22	.19	2.47	34	30.35	.....	.....	.....	.....	.....	.....	.....
Non-malignant tumors and cists.															
Cystis	1	.89	10	.02	.01	10	1	.89	.....	.....	.....	.....	.....	.....	.....
Fibroma	1	.89	8	.02	.01	8	1	.89	.....	.....	.....	.....	.....	.....	.....
Lipoma	1	.89	1	.....	.....	1	1	.89	.....	.....	.....	.....	.....	.....	.....
Sarcoma	1	.89	6	.01	.....	6	1	.89	.....	.....	.....	.....	.....	.....	.....
Aggregate	4	3.57	25	.06	.05	6.25	4	3.57	.....	.....	.....	.....	.....	.....	.....
Violent diseases and deaths.															
Abrasio	12	10.71	82	.22	.19	6.83	12	10.71	.....	.....	.....	.....	.....	.....	.....
Ambustio	13	11.60	86	.23	.20	6.61	13	11.60	.....	.....	.....	.....	.....	.....	.....
Amputatio	1	.89	20	.05	.04	20	1	.89	.....	.....	.....	.....	.....	.....	.....
Concussio cerebri	1	.89	1	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.89	.....
Contusio	79	70.53	501	1.36	1.21	6.34	78	69.64	.....	.....	.....	.....	.....	.....	1
Fractura	11	9.82	405	1.10	.98	36.81	6	5.35	5	4.46	.....	.....	.....	.....	.....

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Diseases and injuries.	Enterprise.				Nipsic.				Quinnebaug.				Trenton.				Wyoming.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																								
8.—*Diseases of the digestive system*—Continued.																								
Dysenteria acuta	1																				1			
Dyspepsia	3								4				1				5				13			
Enteritis									2												2			
Gastritis									1												1			
Hæmatemesis																	1				1			
Hæmorrhois					2				1				4								7			
Hepatitis acuta									1												1			
Hernia																	1				1			
Icterus	1								9				2				2				14			
Pharyngitis					1								1				8				10			
Tonsilitis	7				9				4				19				3				42			
Vermes	1				2												2				5			
Aggregate	31				66				40	1			86	1			49				272	2		
Ratio per M	27.67				58.92				35.71	.89			76.78	.89			43.75				242.85	1.78		
Number of sick-days	114				218				223				419				197				1,146			
Average number sick daily	.80				.80				.60				1.14				.53				.75			
Average number sick daily per M	.71				.71				.53				1.01				.47				.66			
Average duration of treatment					3.30				5.57				4.87				4.02				4.21			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on each ship on the European Station.*

Diseases and injuries.	Enterprise.				Nipsic.				Quinnebaug.				Trenton.				Wyoming.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES.																								
1.—*Zymotic diseases.*																								
Erysipelas	1												2								3			
Febris continua simplex					2				1				12								15			
Febris intermittens	8				2				34				42				37	1	3		123	1	3	
Vaccina									8				7								15			
Variola																	1	1			1	1		
Varioloides									2	1											2	1		
Aggregate	9				4				45	1			63				38	2	3		159	3	3	
Ratio per M	8.03				3.57				40.17	.89			56.25				33.92	1.78	2.67		141.07	2.67	2.67	
Number of sick-days	52				19				259				471				233				1,034			
Average number sick daily	.36				.06				.70				1.28				.63				2.82			
Average number sick daily per M	.32				.05				.62				1.14				.56				2.51			
Average duration of treatment	5.77				4.75				5.75				7.47				6.13				6.50			
2.—*Constitutional diseases.*																								
Adynamia	1	1			1				4	3											6	4		
Hydrops																	1				1			
Rheumatismus acutus	2								11				24	2			10				47	2		
Rheumatismus chronicus					14				4				7				1				28			
Sciatica													1								1			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Diseases and injuries.	Enterprise.				Nipsic.				Quinnebaug.				Trenton.				Wyoming.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES—Continued.																								
2.—*Constitutional diseases*—Continued.																								
Syphilis primitiva	3				5				3								2				13			
Syphilis consecutiva	3	1			1				6	2			6				2				18	3		
Aggregate	9	2			21				28	5			38	2			18				114	9		
Rate per M	8.03	1.78			18.75				25	4.46			33.92	1.78			16.07				101.78	8.03		
Number of sick-days	149				285				306				357				205				1,302			
Average number sick daily	1.05				1.03				.83				.97				.56				.85			
Average number sick daily per M	.93				.91				.74				.86				.50				.75			
Average duration of treatment	16.55				13.57				10.92				9.39				11.38				11.42			
LOCAL DISEASES.																								
1.—*Diseases of the nervous system.*																								
Apoplexia													1			1					1			1
Cephalalgia					17				7				2				1				27			
Dementia													1								1			
Epileptia					1				2	1							2		1		5	1	1	
Insolatio													2								2			
Melancholia	1	1							1	1											2	2		
Nausea marina					1																1			
Neuralgia					6				5				10				4				31			

Paralysis								1	1												1	1		
Pleurodynia				1				2			2										5			
Aggregate	1	1		26			18	3			24			1	7		1		76	4	1	1
Ratio per M	.89	.89		23.21			16.07	2.67			21.42			.89	6.25		.89		67.85	3.57	.89	.89
Number of sick-days	65			79			84				76				111				415			
Average number sick daily	.46			.28			.22				.20				.30				.27			
Average number sick daily per M	.41			.25			.19				.17				.26				.24			
Average duration of treatment	65			3.03			4.66				3.16				11.85				5.46			
2.—*Diseases of the eye.*																						
Conjunctivitis				3			1				1				2				7			
Iritis	1						1				1								3			
Keratitis				1							1								2			
Ophthalmia							1												1			
Aggregate	1			4			3				3				2				13			
Ratio per M	.89			3.57			2.67				2.67				1.78				11.60			
Number of sick-days	6			62			18				70				3				159			
Average number sick daily	.01			.16			.04				.19								.10			
Average number sick daily per M				.14			.03				.16								.08			
Average duration of treatment	6			15.5			6				23.33				1.4				12.23			
3.—*Diseases of the ear.*																						
Otitis							1	1											1			
Otorrhœa							1				2								3			
Aggregate							2	1			2								4	1		
Ratio per M							1.78	.89			1.78								3.57	.89		
Number of sick-days							23				10								33			
Average number sick daily							.06				.03								.02			
Average number sick daily per M							.05				.02								.01			
Average duration of treatment							11.5				5								8.25			

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Diseases and injuries.	Enterprise.		Nipsic.		Quinnebaug.		Trenton.		Wyoming.		Total.		
	Invalided.		Invalided.		Invalided.		Invalided.		Invalided.		Invalided.		
	-pital.	rvice.	-pital.	rvice.	-al.	rvice.	-pital.	rvice.	-pital.	service.	hospital.	m service.	-al.

Average number sick daily per M								.06				.06								.03					
Average duration of treatment					7			14.5				6.5								8.85					
6.—Diseases of the absorbent system.																									
Adenitis	1	1			2			5				13				1				22	1				
Aggregate	1	1			2			5				13				1				22	1				
Ratio per M	.89	.89			1.78			4.46				11.60				89				19.64	.89				
Number of sick-days	9				9			120				370				28				545					
Average number sick daily	.06				.03			35				1.01				.07				.35					
Average number sick daily per M	.05				.02			31				.90				.06				.31					
Average duration of treatment	9				4.5			25.8				28.46				28				24.77					
7.—Diseases of the respiratory system.																									
Asthma												1				1				2					
Bronchitis acuta	12	1			1			2				11				18				44	1				
Bronchitis chronica								1				3	1			2	1			6	2				
Catarrhus	13				68			18				41				1				141					
Hæmoptysis								2	2			1								3	2				
Phthisis pneumonica chronica	2	2						4	2	1		1	1							7	5	1			
Pleuritis					1		1									2		1		3		2			
Pneumonia	1	1			1							3			1	1	1			6	2		1		
Aggregate	28	4			71		1	27	4	1		61	2		1	25	2	1		212	12	3	1		
Ratio per M	25	3.57			63.39		.89	24.10	3.57	.89		54.46	1.78		.89	22.31	1.78	89		189.28	10.71	2.67	89		
Number of sick-days	182				292			190				588				210				1,462					
Average number sick daily	1.29				1.06			.51				1.60				.57				.96					
Average number sick daily per M	1.15				.94			.45				1.42				.50				.85					
Average duration of treatment	6.5				4			7.03				9.64				8.4				6.89					
8.—Diseases of the digestive system.																									
Cholera morbus	4							3				5				10				22					
Colica	2				1			2	1			11				2				18	1				
Congestio hepatis																1				1					
Constipatio	1											1				1				3					
Diarrhœa acuta	11				51			13				42	1			13				130	1				

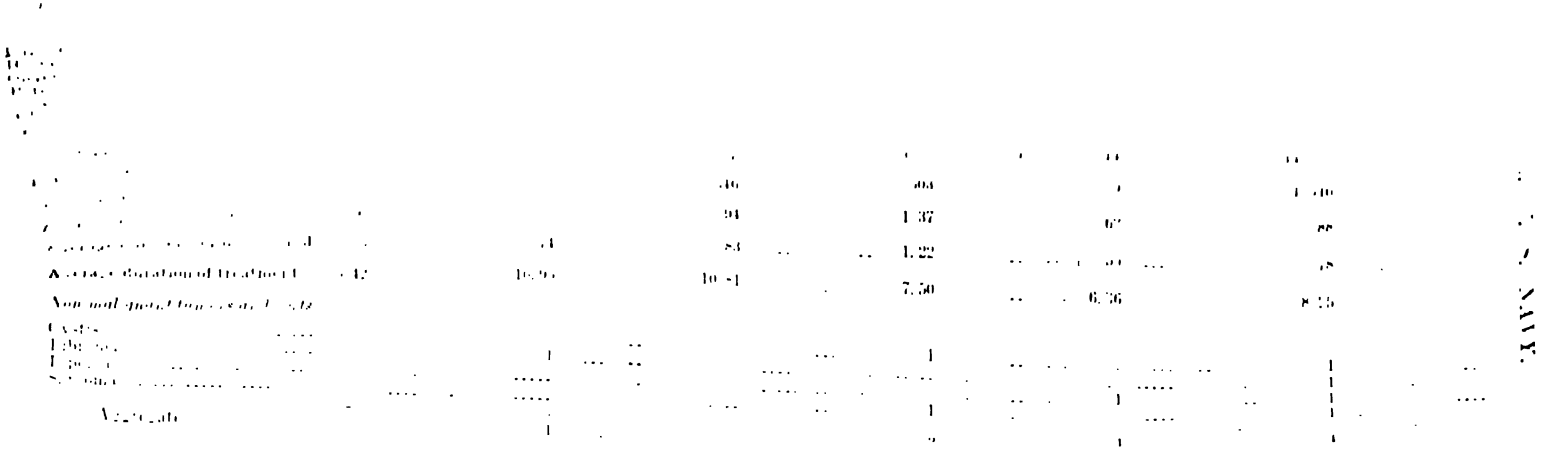
TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Diseases and injuries.	Enterprise.				Nipsic.				Quinnebaug.				Trenton.				Wyoming.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																								
4.—Diseases of the teeth.																								
Odontalgia	1				2				2												5			
Aggregate	1				2				2												5			
Ratio per M	.89				1.78				1.78												4.46			
Number of sick-days	1				5				3												9			
Average number sick daily					.01																			
Average number sick daily per M																								
Average duration of treatment	1				3.5				1.5												1.8			
5.—Diseases of the circulatory system.																								

9.—*Diseases of the genito-urinary system.*																								
Albuminuria								1	1							1				2	1			
Balanitis								2				4								6				
Chancroides								5				28								33				
Cystitis								1	1			1								2	1			
Enuresis																1				1				
Epididymitis												1								1				
Gonorrhœa	2				6			5				14				5				32				
Hæmaturia								1												1				
Nephritis								1												1				
Orchitis	2				11			4				3				5				25				
Phymosis								2								1				3				
Urethræ strictura								1								1				2				
Aggregate	4				17			23	2			51				14				109	2			
Ratio per M	3.57				15.17			20.53	1.78			45.53				12.50				97.32	1.78			
Number of sick-days	87				185			355				698				185				1,510				
Average number sick daily	.61				.67			.97				1.90				.50				.99				
Average number sick daily per M	.54				.59			.86				1.69				.44				.88				
Average duration of treatment	21.75				10.88			15.43				13.68				13.21				13.85				
10.—*Diseases of the locomotive system.*																								
Synovitis																1				1				
Aggregate																1				1				
Ratio per M																.89				.89				
Number of sick-days																33				33				
Average number sick daily																.09				.09				
Average number sick daily per M																.08				.08				
Average duration of treatment																33				33				
11.—*Diseases of the integumentary system.*																								
Abscesses	4				8			10				27				3				52				
Acne												1				1				2				
Cellulitis								1												1				
Eczema					6							4		1		1				11		1		

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Enterprise.	Nipsic.	Quinnebang.	Trenton.	Wyoming.	Total.
		Invalided	Invalided	Invalided	Invalided.



Ratio per M				.89						1.78			.89			3.57								
Number of sick-days				8						16			1			25								
Average number sick daily				.02						.04						.01								
Average number sick daily per M				.01						.03														
Average duration of treatment				8						8			1			6.25								
Poisons.																								
Alcoholismus	4						6			22						32								
Delirium tremens				2												2								
Aggregate	4			2			6			22						34								
Ratio per M	3.57			1.78			5.35			19.64						30.35								
Number of sick-days	9			6			7			62						84								
Average number sick daily	.06			.02			.01			.16						.05								
Average number sick daily per M	.05			.01						.14						.04								
Average duration of treatment	2.25			3			1.16			2.81						2.47								
Violent diseases and deaths.																								
Abrasio				4			4			2			2			12								
Ambustio				1			3			4			5			13								
Amputatio										1						1								
Concussio cerebri				1		1										1								1
Contusio	4			7			14			47			7			79								
Fractura	2	2		2			2			5	3					11	5							
Luxatio	1									2						3								
Stremma				11			18			16			8			53								
Vulnus contusum	5	1		9			6			6			10			36	1							
Vulnus incisum				2			2			8			4			16								
Vulnus laceratum				1			7			5			6	1		19	1							
Vulnus punctum							2			6			3	1		11	1							
Vulnus venenatum													1			1								
Venenatio							1									1								
Aggregate	12	3		38		1	59			102	3		46			257	8			1				
Ratio per M	10.71	2.67		33.92		.89	52.67			91.07	2.67		41.07	1.78		229.46	7.14			.89				
Number of sick-days	178			377			399			1,040			397			2,391								
Average number sick daily	1.26			1.37			1.09			2.84			1.08			1.57								

TABLE III.—*Showing the number of cases, the invalided and dead for each disease, on the vessels, &c.*—Continued.

Diseases and injuries.	Enterprise.				Nipsic.				Quinnebaug.				Trenton.				Wyoming.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																								
Violent diseases and deaths—Continued.																								
Average number sick daily per M	1.12				1.22				.97				2.53				.96				1.40			
Average duration of treatment	14.83				9.92				6.76				10.19				8.63				9.30			
Grand aggregate	108	11			276		1	1	202	17	2		538	9	1	2	238	6	5		1,452	43	9	3
Ratio per M	96.42	9.82			246.42		.89	.89	260.71	15.17	1.78		480.35	8.03	.89	1.78	212.5	5.35	4.46		1,296.42	38.39	8.03	2.67
Number of sick-days	890				1,782				2,371				4,706				1,832				11,581			
Average number sick daily	6.31				6.38				6.47				12.83				5.0				7.64			
Average number sick daily per M	5.63				5.78				5.77				11.45				4.46				6.82			
Average duration of treatment	8.24				6.45				8.12				8.74				7.69				7.97			

NAVAL HYGIENE.

TRENTON.

This vessel spent 89 days of the first quarter at Villefranche, Toulon, and Port Mahon, and 2 at sea. In the second quarter she was 13 days in the ports of Smyrna and Tenedos, Turkey in Asia; 2 at Chanak, Dardanelles; 2 at Piræus, Greece; 3 at Palermo, Sicily; 38 at various ports along the English, French, Italian, and Spanish coast, and 31 at sea. In the third quarter 75 days were passed in ports in Holland, Belgium, England, Spain, France, and Italy, and 17 at sea. In the fourth quarter she remained 30 days at Marseilles, 41 at Villefranche, 17 at Naples, and she was 4 at sea. During the entire year the Trenton was 312 days in port and 54 at sea.

Medical Inspector J. C. Spear, in his report, suggests that—

In our vessels the ordinary lead pipe leading from the water-tanks in the hold to the coppers and scuttle-butt should be replaced by an iron one. I am told by officers experienced in such matters that there would be no difficulty whatever in fitting iron pipes for this purpose. It is quite true that generally the pump is so arranged that most of the pipe is empty, except when water is being pumped, but on the Trenton we have about 20 feet of pipe below the pump, which is constantly filled with water standing from three to eight hours at a time. This portion of the pipe is 1¼ inches in diameter and about 20 feet in length, so that it holds rather more than four gallons of water. Besides, about 4 feet of this pipe is constantly submerged in the tanks. With spring water containing lime there is but little danger of lead contamination, but this is not the case with ordinary distilled water used now aboard ships-of-war, perhaps two-thirds of the time. The captain of the hold called my attention to the fact that when the end of the lead pipe has been standing in distilled water it remains smooth and is not changed in color, while, after being used in a tank of shore water, and on becoming dry, it is covered with a whitish crust difficult to rub off. I have had no reason to advise that any change be made on board this vessel in this pipe, but I do think that in the future, considering the fact that distilled water is now so generally used, the matter ought to be brought to the notice of the Bureau of Construction.

WYOMING.

During the first quarter this vessel occupied 77 days in various ports in France, Italy, Egypt, and Syria, and 14 at sea. In the second quarter 26 days were spent at Villefranche, 37 at other European ports, and 28 at sea. In the third quarter 63 days were passed at ports along the same coast, and 29 at sea. In the fourth quarter she was 88 days at Villefranche, Naples, Leghorn, and Genoa, and 4 at sea. During the entire year the Wyoming was 291 days in port and 75 at sea.

Surgeon F. L. Du Bois, in his sanitary report, remarks:

The berth-deck contains 13,416 cubic feet of air space; here 147 men sleep, an allowance of 90 cubic feet per man. The rest of the crew sleep under the forecastle, which space, being constantly open, is well supplied with fresh air. The berth-deck is ventilated by three hatches, sixteen air-ports, and by a door leading into the fire-room, seldom opened save in hot weather. The galley is on this deck; and the ship not being in the tropics, this has been rather advantageous than otherwise, causing better circulation of air, and warming and drying the decks when steam is not turned on.

There is no sick-bay, patients being accommodated in the after and best ventilated and lighted portion of the berth-deck. The steerage country contains 1,882 cubic feet, and is ventilated by one hatch and six air-ports. Warrant officers' rooms have each 207 cubic feet, two persons in each room. The starboard steerage has 912 cubic feet for four to eight persons.

The wardroom country contains 3,242 cubic feet; is well lighted forward, but poorly aft; is ventilated by two hatches, sixteen air-ports (in state-rooms), by lattice-work between it and steerage country, and by two openings aft which discharge through the stern of the vessel. These communicate also with the shaft-alley. The pantry is in the after part of the wardroom. The state-rooms average 150 cubic feet. The cabin contains 4,512 cubic feet.

The shaft-alley, as mentioned above, is ventilated from the stern of the vessel; the engine-room, by a large hatch over it which, in cold weather and particularly when the try-sail is set, sends a force of wind down which is more than uncomfortable. These two, and a small hatch forward (not to mention the smoke-stack), ventilate the fire-room, from which come few complaints.

With regard to the lights furnished ships-of-war, student's lamps, modified to burn ship's oil, for state-rooms, would render accidents less liable from upsetting candles, and make life on board more tolerable.

The ship can be well heated, steam coils being furnished in cabin, wardroom, steerage, and berth-deck.

The brig is on the spar-deck, under the forecastle, ventilated by holes bored in sides and by an air-port.

The bilges have, on various occasions, given us great trouble from their offensive odors. Each time, after thorough search, pockets full of filth have been unearthed. To clean the bilges the storerooms have to be emptied, and a part of the flooring taken up; and, even then, it was with the greatest difficulty the corners and nests could be reached. This thorough overhauling is done once a week. The ship's bottom being nearly flat, the storeroom floors are but a few inches above it, even amidships; and this space gradually diminishes towards the sides of the ship. It is these wedge-shaped spaces that are so difficult to get at. Were the floors of each storeroom made to be taken up bodily, it would be one step towards facility of cleansing. Flooding the bilges has been tried, with questionable success. The limbers are readily kept free.

The water-closets for use of wardroom and steerage were unsatisfactory till last September, when new ones with double valves were substituted. They have worked well thus far. The men have the usual accommodations in the bow of the ship, exposed to the weather. Last spring a head was built for their use in bad weather under the forecastle, which is easily kept free from odors, and has proved valuable in preventing disease.

Six cases of *tænia solium* have been treated during the past year and a half, all of which probably originated on the station.

NIPSIC.

This vessel left Hampton Roads, Va., at the beginning of the second quarter, 1880, to join the European fleet. During this quarter 18 days were spent at Villefranche, 14 at Leghorn, 5 at Alexandria, Egypt, 8 in Spanish and Italian ports, and 45 at sea. In the third quarter 64 days were spent in various European ports and 28 at sea. In the fourth quarter she was 84 days at Constantinople, one at Villefranche, and 7 at sea. During this entire period, the Nipsic lay in port 195 days and was at sea 80 days.

Surgeon J. W. Coles makes the following report:

The United States steamer Nipsic is a new screw steamer, fitted with compound engines, bark-rigged, having a tonnage of 615 tons, and a displacement of 1,375; she carries a battery of 6 guns, and a crew of 186 persons, consisting of 22 officers and 164 men. She was placed in commission October 11, 1879, at the navy-yard, Washington, D. C., but finished fitting for sea at the navy-yard, Norfolk, where she received her regular crew December 2, 1879.

In the cabin the air-space, means of ventilation, lighting, heating, and general arrangements for comfort are all that can be expected on board of a ship. It is situated on the after part of the spar-deck, has two gun-ports in the stern, two gun-ports and two small air-ports in the sides, two hatches in the poop-deck, and seven windows, and two doors in the forward bulkhead. By these openings abundance of light and an unlimited amount of air can, at all times, be admitted.

The room occupied by the executive officer is on the starboard side of the spar-deck, just outside of the cabin, under the poop. It has five windows, one air-port, and a door. Through these openings plenty of light and air can always be introduced.

The wardroom is under the spar-deck, in the stern of the ship. Besides a country, it has five rooms on a side, and a pantry in the after-part. The openings for lighting and ventilating this apartment are two hatches in the forward part, one 5 feet 5 inches by 5 feet 2 inches; the other 5 feet 5 inches by 3 feet 8 inches; 10 air-ports, 7 inches in diameter, one in each room; an air-shaft, 2 feet 6 inches by 2 feet 4 inches, and a copper tube, 6 inches in diameter. The two last lead from the pantry up through the cabin to the poop-deck. The ports are so near the surface of the water that they can

only be opened in very smooth weather; even in harbor they must be closed, if the sea is rough. The country of the wardroom is fairly ventilated, when the hatches are open, but when closed there is no ventilation, and the air soon becomes foul. The forward rooms opposite the hatches are pretty well lighted and ventilated, but the after ones are close and dark, if the air-ports are closed.

In building the ship, holes for ventilating the spaces between the timbers were left over the deck-knees, opening into the wardroom, steerage and berth-deck. Cracks communicating with these spaces were also left between the inner planking, under the berths of the officers' rooms. On joining the ship, I recommended that these openings should be plugged and calked, and the department ordered it to be done, but the work was not thoroughly performed, and now, at times, the smell from the bilges renders the rooms almost uninhabitable.

The pantry is well ventilated by the air-shaft and copper tube, opening on the poop, and is quite free from the usual smells of ship pantries.

The after part of the wardroom is faulty in both light and ventilation. Fresh air can only reach the after-rooms by diffusion. Examination of air in these rooms, with ports closed, hatches open, and windsails down, shows carbonic acid to exist in the proportion of 1.136 volumes to 1,000 volumes of air.

The steerage is just forward of the wardroom, between it and the engine-room. It consists of a room on the starboard side having four bunks, two rooms on the port side, with two bunks each, and a country. Opening into the last is a hatch 5 feet 2 inches by 5 feet 5 inches, which is the common passage-way from the wardroom and steerage to the deck above. The hatch furnishes a good supply of light and air when uncovered, but if covered the place below is dark and soon becomes close. In the rooms are four air-ports, two in the one on the starboard side and one in each of the other two. But like those in the other parts of the ship below the spar-deck, they can only be opened in the most favorable weather.

Ten persons live in these quarters; five in the starboard room, two each in the port rooms, and one in the country. The rooms are badly ventilated, and on entering them when occupied at night the air is oppressive. Carbonic acid has been found as high as 1.606 volumes to 1,000 volumes of air.

The forecastle contains 6,131 cubic feet of air-space, and 52 men swing here, thus allowing 127 cubic feet to each man. Light and air can be furnished in abundance by four air-ports, four gun-ports, two hatches opening on the top-gallant forecastle, and the after end, which is entirely open, but closed by a curtain when necessary. Carbonic acid has been found here in large quantities, notwithstanding the situation on the spar-deck, and numerous openings for ventilation. This has been owing to the closure of all outlets for air except the after end, when but little breeze was stirring, and foul air accumulated from the sick-bay and berth-deck through the communicating hatches.

The berth-deck has 108 places for swinging hammocks, with 14 inches between the hammock-hooks. The total air-space is 8,643 cubic feet, giving 80 cubic feet to each man. Air and light are admitted by ten air-ports, 7 inches in diameter, in the sides, and the following openings in the spar-deck: Two hatches, one 5 feet 2 inches by 3 feet 11 inches, about the center of the deck, the other 5 feet 2 inches by 4 feet 6 inches, further forward and opening into the forecastle, and two coal-holes, 1 foot 3 inches in diameter, one on each side in the extreme after part of the deck. In fine weather the coal-holes are covered by perforated plates, and windsails are passed through the hatches. The deck immediately around the hatches receives a pretty good supply of air when the windsails are down, but it is very different when the hatches are covered in stormy weather, and at night when the hammocks are occupied. Then, the air, particularly in the after part of the deck, is almost stifling. A bulkhead only separates the fire-room from the deck, and numerous observations made near the bulkhead, while the ship has been under steam, show a temperature over 12° higher than in the open air. At night carbonic acid has been found to be about 1.300 volumes to 1,000 volumes of air.

In March of this year, while the ship was lying at the navy-yard, Norfolk, Va., I reported the high temperature and faulty ventilation of the after part of this deck to the commanding officer, and recommended that metallic ventilators, with turning cowls, be placed over the coal-holes in the spar-deck. The matter was referred to the department, and I believe orders were issued to put up ventilators, but the ship was ordered to sea and the work was not done.

The prison-cell, issuing-room, and dispensary are on the berth-deck. The first is built around the foremast between the two large hatches. It has a total air-space of 190 cubic feet. Air and light are admitted by four grated windows, 1 foot 6 inches by 1 foot 7 inches, two opening towards each hatch. The amount of carbonic acid found varies with the number of occupants and general ventilation of the deck. It ranges about 1.5 volumes to 1,000 volumes of air. In situation, ventilation, and lighting, this cell is a great improvement on those used on board of naval ships a few years ago.

The issuing-room and dispensary are on each side of the deck against the fire-room

bulkhead. When the ship is under steam both are so heated by the fire-room as to render them almost useless for the purpose intended. Many kinds of medicines cannot be kept in the dispensary on account of the heat and coal-dust, which comes through the bulkhead. I have been compelled to have the dispensing done in the sick-bay, and give up the dispensary, except as a store-room for such articles as will not be injured by heat and coal-dust. If the dispensary joined the sick-bay this would be remedied, and it would be much more convenient in giving out medicines.

The sick-bay is in the eyes of the ship under the spar-deck. It has a total air-space of 1,281 cubic feet, and was intended to accommodate six persons, but owing to its irregular shape and projecting knees only four hammocks can be comfortably swung. An air-port in each side and a hatch, 2 feet 10 inches by 2 feet 5 inches in the spar-deck, are the means of lighting and ventilating. Immediately above the hatch is another in the topgallant forecastle. When the weather will permit, a windsail is kept through the hatches, and it furnishes a pretty good supply of air. Sometimes, however, the odors from the head pass down the windsail and are troublesome below. Besides plenty of air and light, quietness is necessary for the sick. But this place is badly ventilated unless the windsail is down, always dark, and very noisy. Immediately overhead, under the forecastle, is where the men congregate during the day for smoking and talking, and in the evenings for their amusements, such as singing, playing on musical instruments, and dancing. The carpenters have their bench and do their work there. Add to this the noise of the head-pump and the thunder of the chain in letting go and raising anchor, and it will be seen that the sick-bay is the very worst place on board the ship for the treatment of the sick.

The fore-hold, fore-passage, and yeoman's store-room receive fresh air through windsails, the hold and passage from those of the berth-deck hatches, and the yeoman's room from the one in the sick-bay. The other store-rooms are only ventilated when opened. During the months of January and February, while cruising in the West Indies, the after store-rooms, used for keeping provisions, became so foul as to make it very unpleasant in the wardroom and steerage.

A hatch, 6½ feet by 6 feet 10 inches, over the engine-room, lights and ventilates that place well. The temperature, while steaming with an ordinary breeze, and a windsail passed through the hatch, is about 10° higher than on deck.

Over the fire-room are two hatches and three sheet-iron ventilators. One of the hatches, 6 feet 4 inches by 6 feet, is just aft of the smoke-pipe; the other, 6 feet 5 inches by 2 feet 3 inches, is just forward of it. Both are somewhat obstructed by pipes and gratings. The ventilators, 1 foot 5 inches in diameter, are placed around the smoke-pipe, have revolving tops, and pass down within 8 feet of the fire-room floor. A steam fan, for extracting heated air from over the boilers and engine-room, was put in the ship, but from trials it has been found to be of no use, as it will not reduce the temperature in these places. The heat from the furnaces causes a strong upward current through the hatches, drawing air from both the fire-room and engine-room, also creating a strong current down the ventilators. The temperature, taken between the hatches, under the up-take, about the height of a man's head, and while the ship is under steam, is found to average about 116° or some 40° higher than the open air. This could be very much reduced by increasing the number of ventilators.

The distiller-room is situated on the after part of the berth deck, and communicates both with it and with the fire-room. It is ventilated by a circular hole 2 feet 5 inches in diameter in the spar-deck.

The coal-bunkers receive air only when the small doors in the fire-room, and bunker-holes in the spar-deck are opened.

The shaft-alley is almost without ventilation and light. Its forward end communicates with the engine-room, and a copper tube, 6 inches in diameter in its after end, passes up through the ward-room pantry and cabin to the poop.

Great care has been taken to keep the bilges clean, but notwithstanding the ward-room and steerage often smell badly of sulphureted hydrogen. The forward bilges have given no trouble except one place under the shell-room, just forward of the fire-room. That place is so situated and filled with pipes that it can only be cleaned by a stream of water from a hose.

Before the ship sailed for this station the flooring of some of the after store-rooms was taken up, and the place underneath filled with cement to avoid the danger of the accumulation of filth.

In addition to the holes in the officers' rooms and berth-deck for ventilating the spaces between the timbers, there are openings on the inside and outside of the ship, just below the rail, for the same purpose. These are too few in number, as the greater part of the spaces have no communication with the open air.

The different habitable parts of the ship, except the sick-bay and forecastle, are fitted with steam-heaters, which furnish sufficient heat for comfort even in the coldest weather. The sick-bay receives heat from the berth-deck, through the lattice-work and door in the bulkhead, but it is generally chilly. The galley, under the forecastle, keeps that place quite warm if the after end is closed.

The men's water-closet, or head, cannot be too strongly condemned. It is situated in

the most exposed part of the ship, and at sea it is entirely without shelter. Men obliged to go there at night from warm hammocks, lightly clothed, and unprotected from the weather, must, to say the least, be very liable to sickness from exposure. Proper water-closets should be put up in a more convenient and better protected place.

The men should have better facilities for washing and bathing. They now have to do all their washing in the open air, and early in the morning, except on special occasions. A row of fixed basins and a bath-tub might be placed under the forecastle, which would give them an opportunity to wash and bathe, whenever necessary, in a covered place, and would add very much to their health and comfort.

The greater part of the clothing for the crew, or the materials to make it, has been drawn from that in store on board of ship. It has been good in quality, but more expensive than that obtained at some of the ports visited. I would suggest another form of cap instead of the one now worn by the men—one not so heavy, higher in the crown, and with a visor. Such a cap is particularly required for protection from the sun in warm climates. Oiled over-suits and rubber boots might be added to the clothing with advantage. The boots are very necessary, both in wet weather and in washing decks.

The provisions have been liberal in allowance and of good quality, expecting some furnished in fitting out, which were old and hardly fit for use. In port, fresh meats and vegetables are issued two or three times a week, and the men supplement them from the bumboat. Boiling should not be so general in the preparation of food, and a galley should be adopted which would offer greater advantages in the way of roasting, baking, and broiling for the men. The ship's cook should understand general cooking and know how to prepare the ration to the best advantage. A greater variety in cooking would economize the food, make it more palatable and more easily digested. The issue of flour for making soft bread, instead of hard bread, is greatly to be desired. Flour takes up less room in stowing than hard bread, is cheaper, and could be easily made into good bread if experienced bakers were put on board of ship for that purpose. A substitution of tables and benches for the mess cloths would be a great improvement. Besides giving the men an opportunity to eat their meals in a proper and civilized manner, they would serve for reading, writing, &c., and when not in use could be stowed away overhead on the berth-deck, or in some other suitable place. The meal hours come too close together. All the meals of the day for the men are eaten in eight or nine hours. The time between them should be increased.

The water used for drinking and cooking purposes has been both procured from ashore and distilled on board of the ship. That distilled, especially at sea, has been bad, from the large amount of oil mixed with it, and often contains so much as to make it unfit for use. Water from ashore has been used whenever it has been considered prudent to do so, and has, as a rule, been good. Distilled water was always used in the West Indies and in the East excepting at Constantinople.

In conclusion I will state that the ship is overcrowded. Less room is allowed to an officer in the starboard room of the steerage, and a man on the berth-deck, than is fixed as a minimum for a passenger on a merchant ship by the Revised Statutes of the United States. Passengers are seldom longer than a month in making a voyage, but those living in the above-mentioned apartments are expected to make a three years' cruise. This overcrowding should be remedied, either by putting fewer persons on board of ship, or by increasing the size of the places where they are to live, besides improving the lighting and ventilation.

QUINNEBAUG.

During the first quarter this vessel lay 14 days at Villefranche, 76 at Leghorn, Italy, and was one day at sea. In the second quarter, 53 days were spent at various ports in Italy, France, Spain, Morocco, Belgium, and Sweden, and 38 at sea. In the third quarter, 21 days were spent at Southampton, England, 52 at various ports on the Mediterranean Sea, and 19 at sea. In the fourth quarter, 71 days were occupied at Smyrna, Turkey, 7 at Egypt, 5 at other ports on the Mediterranean, and 9 at sea. During the entire year the Quinnebaug was 299 days in port and 67 at sea.

ENTERPRISE.

This vessel was attached to the European fleet the first quarter and 50 days of the second quarter. In the first quarter, 72 days were spent at various ports along the station and 19 at sea. In the second quarter, 4 days were spent at Funchal, Madeira, 2 at Hampton Roads, 10 at Washington, and 34 at sea. During this entire period 88 days were occupied in port and 53 at sea.

MEDICAL TOPOGRAPHY AND SANITARY REPORTS.

REPORT OF MEDICAL INSPECTOR J. C. SPEAR.

UNITED STATES STEAMER TRENTON.

Genoa, Italy.—This large city is built on a series of hills, and the underlying rock is carboniferious limestone. The natural drainage of the city is in consequence very good, but the sewer system is said to be defective. The location of the city is singularly free from the low swampy soils often found bordering the sea coast in Italy, and there is no considerable body of fresh water near the city. Malarial fevers are very rarely met with. A physician in practice told me he never saw but two cases of malarial fever in Genoa, and these were in the city hospital years ago. Last year there was a severe epidemic of small-pox, and at present typhoid prevails almost as an epidemic. In the winter the weather is cold and there is a great deal of snow and rain, and high winds are frequent.

The municipal hospital, usually spoken of as the Pammatone hospital, is a very large institution, and accommodates the indigent sick of the city as well as the native and some of the foreign sailors. There are 1,200 beds and at present about 900 sick. The building is composed of four sides of equal length surrounding a large open square or central court, and is three stories high. It is said to have been designed by Alessi, the distinguished Genoese architect, who built many of the noble palaces of Genoa. The ground floor is occupied as storerooms and offices, and the like; the second story is set apart as one large ward running entirely around the four sides of the building, for men; and the third story, similarly arranged, is reserved for women. The wards are lofty and very wide, with arched ceilings and windows in both walls. The staircase is very imposing, and is adorned with statues of many of the members of the old Genoese noble families. No doubt, in its day, this was the finest hospital building in Europe, and remains a lasting monument to the charity and benevolence of the former merchant princes of this old interesting city. Sailors are received at the rate of three francs a day. Within the last year, Lister's antiseptic methods have been introduced and are in general use. The house surgeon told me that the rate of mortality following surgical operations, since the introduction of the antiseptic plan, had been greatly reduced. I also saw fractures of the thigh treated with weight and pulley. Pneumonia, of which there were many cases in the wards, is treated by the cold bath when the temperature exceeds 102.5, quinia in large doses; and stimulants to keep up the action of the heart are used in many cases. I was assured that blood-letting in pneumonia has been given up by hospital physicians in Northern Italy. I was quite struck with a remark made to me one day by one of the young resident physicians in the hospital at Florence. He said the medical men in Italy are now beginning with instruments of precision to study disease seriously!

The Protestant hospital is situated on a high hill in the northeastern quarter of the city, and is rather difficult of access for sick people. The building was formerly a private residence, and has been so altered as to make a comfortable little hospital with accommodations for twenty-three sick. There are several separate chambers for officers. The charge for sailors is three francs a day, and for officers from five to ten, according to accommodations. The surgeon is a Swiss gentleman highly

spoken of. All the attendants speak English, and all the patients present at the time of my visit, eight in number, were English. This is certainly the best place to send our sick. Cases of small-pox are not received.

Leghorn, Italy.—This sea-port city is situated on an alluvial plain, a few miles south of the mouth of the river Arno. In the summer and autumn there is a good deal of malaria in the city, but as the usual anchorage of our ships-of-war is half a mile seaward under the new breakwater, experience shows that even in the unhealthy season the crews and officers of our ships enjoy good health. In August and September Leghorn is much resorted to by the Italians for superior surf-bathing. The city is supplied with an abundance of good water brought in from the neighboring hills, some eight miles distant. The distributing basin on the main street covers about one acre, and is walled and roofed in. Along the side of the main tank or basin there are small filtering tanks, where the sediment is allowed to deposit before the water enters the main basin. The Trenton as well as other vessels of the squadron used the water and found it uniformly good.

The municipal hospital is a large, irregularly constructed old building, part of it being formerly an old convent, and is ill adapted for hospital purposes. It contains four hundred beds, and at the time of my visit was quite full with sick. All the sailors treated on shore have to be sent here. The medical and surgical staff appeared to be very competent men. The charge is three francs a day.

Villefranche (sur mer), France.—This small town is a very healthy one. Being built on the side of a steep limestone hill, its drainage is excellent, and the high mountains directly back of the village admirably protect it from the north cold winds of January and February. There is very little if any malaria here even in the early autumn, nor are mosquitos ever troublesome, as they are in Nice from August to December. I suppose it would be impossible to find a healthier station for the squadron than the beautiful little harbor of Villefranche. The quarantine station for the port of Nice is here. There are several buildings connected with it, all of which are inclosed in a high wall. In case of an epidemic in our fleet, this quarantine station affords excellent facilities for landing the sick. Early in the year, during a slight outbreak of small-pox aboard the Quinnebaug, we availed ourselves of the use of these buildings, which were courteously placed at our disposal by the director of the health department connected with the prefecture of the Alpes maritimes. A civil hospital, containing two wards of twenty beds each, has been recently built in the upper part of the town. It is in charge of Sisters of Charity, and is kept neat and orderly. The sick of the squadron are often sent here and do very well. It is our practice in serious cases to furnish medical or surgical attendance from the vessels in port, and the Sisters and the regular medical attendant at the hospital readily assent to this arrangement. The charge is three francs a day. The diet, nursing, and ward accommodations are quite good. It is the squadron order that all sick sent to this hospital shall have their accounts transferred to the pay officer in charge of stores at Villefranche. The water supply is very good and comes from the same source as that supplied to Nice. Our ships-of-war always use this water, both while in port and to fill the tanks before going to sea, and no serious disease has ever been attributed to it. I have no doubt it is advisable to supply the crew with spring-water at least a part of the time, when it can be obtained pure. At Villefranche some care ought to be exercised by the medical officers testing the water, as it often

happens that the tanks in which it is brought off, leak, or the salt water washes in over the top.

Nice, France.—This city still maintains its long-established reputation as the great winter sanitarium of Europe. Though not so completely protected from the north winds as other points along the Riviera, it affords to most invalids the most desirable place as a winter residence, as the hotel accommodations, amusements, and the like, are greatly superior here to those found in the more sheltered health resorts, as Mentone, San Remo, and Bordighera. The climate varies one winter from another. That of 1879–'80 was exceedingly fine, while 1880–'81 was rainy, damp, cold, and overcast more than half the time. I think very many cases of pulmonary consumption do well here for six months in the year, beginning early in October, but I doubt very much whether these same cases do as well, on the whole, in Nice as they do in Florida, or other localities in the southern part of our own country. It is a well-established rule that hemorrhagic cases should not be sent to the stimulating climate of Nice. I should say that the cases of phthisis especially likely to be benefited are those with feeble powers of digestion and assimilation, and with no tendency to hemorrhage. Cases where the throat is much affected are not benefited. Rheumatic patients do exceedingly well, especially in the spring and autumn months, and so do cases of neuralgia, sciatica, dyspepsia, anæmia, and asthma. I think there is no place in the world where the hopeless sufferer from locomotor ataxia, especially in the advanced stage of the disease, can be so comfortable the year round. By spending a great part of each day in the open air, with much to amuse and divert, many such sufferers greatly prolong their lives, the disease making but little progress from year to year.

Persons with insomnia, a tendency to apoplexy, acute gout and like conditions, are made worse by a residence in this climate. I cannot advise my countrymen suffering from malarial poison to select Nice as a winter residence, for although I have never met here with those terrible cases of malarial fever so constantly seen among American travelers at Rome and Naples, I am quite sure many mild cases of malarial fever do originate in Nice, mild in character, it is true, but so certainly of this origin that the sufferer from chronic malarial disease ought not to choose Nice as a home, even for the winter months. Certain portions of the new quarter of the city are badly drained, the land being low and of clay. The water-closets never have communication with the street sewers, but instead deliver into cesspools generally located in the back-yard, sometimes in the cellar. These cesspools are not ventilated at all, and the traps between them and the closet are of the rudest sort, even in the best houses. The cesspool is cleaned out when full by a steam-pump, I think at the expense of the city, and is done without any odor. I believe it is held by French sanitarians that it is the best plan not to have the water-closets connect with the sewers. Indeed, I understand in Nice it is forbidden by law. The hospital of Saint-Roch is a large, well-constructed establishment, built about ten years ago by the city. It contains 300 beds, and at present 250 patients. Sisters of Charity have general charge of the hospital, and everything is neat and orderly. Lister's antiseptic method did not appear to be in use, nor have I met with it elsewhere in France so frequently as I had expected. The fracture dressings were not well applied, and in one case of fracture of the thigh, there were no means whatever of making any extension or counter-extension. I was told that the hospital was much in need of funds, *and that possibly* may be the reason for many deficiencies, of which the *intelligent* medical staff are as fully aware as any one. The military

hospital for the soldiers on duty about Nice is a part of the Saint-Roch Hospital, but is separated from it by high railing fence, and has an entrance to the side. It contains 110 beds, several chambers for officers, and is under the charge of Dr. Baudon, medicin-major de 1re classe, of the French army. It is well supplied with everything needed for the sick, and is a well-conducted establishment. On one occasion we sent three cases of small-pox here before we knew about the building at the quarantine station, Villefranche, but our experience was not altogether satisfactory on this occasion.

During the year I met with a number of cases of the so-called Roman fever. Six of these cases were aboard ship. Early in the fever, in the first cases I treated, it was not an easy matter to satisfy myself that the disease was not typhoid fever. I think this fever is in some respects unlike our common remittent. The bowels are nearly always constipated, and the fecal discharges are of a yellow color. The fever runs a course of about three weeks, and does not yield to quinia even in large doses. The stomach is not irritable. The difference between the morning and evening temperature is not so great as in typhoid fever. Here it is rarely more than one degree, while in typhoid it is generally as much as a degree and a half or even two degrees. This feature aids one very much in making an early diagnosis. There was no delirium in any case, though the temperature occasionally rose to 105. Only in one case were stimulants required. I was not at all satisfied that quinia was of any service except as an anti-pyretic. The cold bath and cold sponging and ice bags were used in one case, that of an American lady who contracted the disease in Rome. I have not observed in any of these cases any evidences of malarial poison persisting in the system, with recurring attacks of fever, and so forth. There was one relapse from taking cold during the period of convalescence, and it ran the usual course of the original attack of fever.

SANITARY CONDITION

OF THE

ASIATIC STATION.

ASIATIC SQUADRON.

The squadron employed on the Asiatic Station during the year 1880 comprised six vessels, one less than in 1879: the Richmond, second rate, flagship; the Swatara, third rate; the Monocacy, third rate; the Ashuelot, third rate; the Alert, third rate; and the Palos, fourth rate. The strength of the squadron was 1,088 men, for the year, all the ships serving the whole period.

		Per M.
The total number of admissions, including those remaining from the previous year, was	963	885.11
Discharged cured	872	801.45
Invalided to hospital	72	66.17
Invalided from service	1	.91
Died	3	2.75
Continued	15	13.65

Compared with the previous year there was a reduction in the sick rate of 214.89 per M, in the invaliding rate of 19.82 per M, and in the death rate of 3.42 per M.

From the returns of the British squadron on the same station, it is found that the sick rate of that force for the same period was 1,530.21 per M, which exceeds that of our own to the extent of 645.10 per M. The invaliding rate was 37.76, or 29.32 less than in our squadron, and the death rate exceeded ours by 6 60 per M. In the Prussian squadron the sick rate was 954.7 per M, the invaliding rate was 109.8 per M, and the death rate 3.5 per M.

The number of days lost to the service was 7,837, and the average duration of treatment 8.13. The daily average number of sick was: absolute, 21.41; relative, 19.67. Comparing the returns with those of last year, it will be seen that there was a reduction in the total loss of service of 2,547 days, in the daily average sick rate per M of 5.06, and in the average period of treatment of .68 of a day.

The average daily loss of service among the various classes of disease may be shown by the following ratios per M, together with that of 1879:

General diseases:	1880.	1879.
Zymotic	.91	1.56
Constitutional	3.75	4.58
Local diseases:		
Diseases of the nervous system	.86	.89
Diseases of the eye	.59	.51
Diseases of the teeth	.03	.03
Diseases of the circulatory system	.31	.17
Diseases of the absorbent system	1.22	.78
Diseases of the respiratory system	.78	3.12
Diseases of the digestive system	2.69	2.83
Diseases of the genito-urinary system	2.84	3.17
Diseases of the locomotive system	.14	.17
Diseases of the integumentary system	1.65	2.08
Non-malignant tumors and cysts	.11	.09
Poisons	.30	1.50
Diseases from violence	3.37	3.79

The daily average sick rate of the various ships may be shown as follows:

	Per M.
Richmond	5.70
Swatara	5.81
Monocacy	3.04
Ashuelot	1.97
Palos	.60
Alert	2.49

The invaliding was distributed among the various groups as follows:

General diseases:	No.	Per M.
Zymotic	7	6.43
Constitutional	12	11.02
Local diseases:		
Diseases of the nervous system	4	3.67
Diseases of the eye	5	4.59
Diseases of the ear	1	.91
Diseases of the circulatory system	6	5.51
Diseases of the respiratory system	8	7.34
Diseases of the digestive system	9	8.27
Diseases of the genito-urinary system	8	7.35
Diseases of the locomotive system	1	.91
Diseases of the integumentary system	2	1.83
Poisons	1	.91
Diseases from violence	8	7.35

The ships from which these were invalided were as follows:

Richmond	15
Swatara	21
Alert	22
Monocacy	9
Ashuelot	5
Palos	1

Of the 3 deaths, 2 occurred on the Swatara and the third on the Monocacy, the two former from drowning.

GENERAL DISEASES.

There were 189 cases included in this division, a ratio of 173.75 per M, a very large reduction from last year, when there were 287 cases, or 249.56 per M.

ZYMOTIC DISEASES.

The 81 cases included in this group form a ratio of 94.44 per M, which is smaller by more than one-half than that of 1879, when it was 98.26. The loss of service was 368 days, a daily average of 1, and the average period of treatment was 4.54 days. In the disposition of the cases, 9 were invalided to hospital, which is in the ratio of 6.43 per M, slightly larger than that of last year. The cases were: erysipelas, 1; fibricula, 4; simple continued fever, 7; enteric fever, 2; intermittent fever, 53; remittent fever, 9; roseola, 2; varicella, 1; varioloid, 2. The ratios per M contributed by the various ships were: Richmond, 17.46; Swatara, 18.38; Monocacy, 11.94; Ashuelot, 10.11; Alert, 11.03; Palos, 5.51.

Febris continua simplex.—Returns were made of 7 cases of this affection, a ratio of 6.43 per M, and a reduction of 7.48 from that of 1879. Five cases occurred on the Alert, and the remaining 2 on the Richmond and Monocacy.

Febris enterica.—Two cases of typhoid fever appear on the returns, 1 occurring on the Richmond and 1 on the Swatara. The latter was

invalided to hospital; and the average duration of the two cases was 25 days. Both cases seem to have originated from influences to which they were exposed on shore. There were no returns of this disease last year.

Febris intermittens.—Malarious fevers were one-third less frequent than during the antecedent year, the returns including 53 cases of intermittent and 9 of remittent fever. The increase of the former was in the ratio of 25.20 per M, while there was an increase of the latter of 3.06 per M. These affections prevailed most extensively on board the Swatara, from which ship 15 cases were reported; there were 13 on the Richmond, 11 on the Monocacy, and 7 on the Alert.

The 2 of roseola and varioloid respectively reported, occurred on the Richmond, and were immediately transferred to hospital. That of erysipelas, which happened on the Swatara, was also invalided to hospital.

The following table presents the results of vaccination in the squadron:

Asiatic Station.

Ships.	Presenting evidence of small-pox.		Presenting evidence of previous vaccination.		No evidence of previous vaccination.		Total.
	Successful.	Unsuccessful.	Successful.	Unsuccessful.	Successful.	Unsuccessful.	
Ashuelot	0	14	0	9	0	5	28
Swatara	0	2	0	86	0	38	126
Total	0	16	0	95	0	43	154
Per cent. of cases	10.4		61.7		27.9		
Per cent. of successful	0.0		0.0		0.0		0.0

CONSTITUTIONAL DISEASES.

This group of diseases yielded 108 cases, a ratio of 99.26 per M, and a reduction of 52.04 per M as compared with that of last year. The total loss of service was 1,495 days, a daily average of 4.08; and the average period of treatment was 13.84 days. Twelve cases were invalided to hospital, a ratio of 11.02 per M, less than half that for 1879, when it was 26 per M. The aggregate was made up of the following cases: adynamia, 7; lumbago, 2; podagra, 1; acute rheumatism, 30; chronic rheumatism, 17; sciatica, 2; primary syphilis, 21; secondary syphilis, 26; torticollis, 1; tuberculosis, 1. The ratios contributed by the ships were as follows: Swatara, 31.25; Richmond, 17.30; Monocacy, 18.28; Ashuelot, 10.11; Alert, 15.62; Palos, 4.59.

Adynamia.—The 7 cases reported occurred on board the Monocacy, Ashuelot, and Palos, which contributed 2 each, and the Alert 1, the ratio of the whole being 6.43 per M, about one-third that of last year. One from the Monocacy was invalided to hospital.

Rheumatism.—The number of entries during the year was, acute rheumatism 30 and chronic rheumatism 17, making a ratio for the former of 19.30 per M, and for the latter 15.62 per M, showing a reduction, as compared with last year, of 14.17 per M for the acute form and 30.46 for the chronic. Five cases of the former and 1 of the latter were invalided to hospital, the invaliding rate being about one-half that of the previous year. The *total loss of* service was 561 days. A very large proportion

of the cases happened on the Swatara, which reported 31, while the Richmond contributed but 4, the Monocacy 4, the Alert 5, and the Ashuelot 3; and none happened on the Palos.

Syphilis.—The number of admissions during the year for primary syphilis was 21 cases, and for secondary syphilis, 26 cases, making a ratio of 19.30 per M and 23.89 per M, respectively. One case of the former and 3 of the latter were invalided to hospital. There was a reduction, compared with 1879, of 13.78 per M for primary syphilis and of 10.03 for secondary. The total loss of service was 783 days, which is less by 420 than that of the preceding year. The Richmond furnished the largest number, 15; next, the Monocacy, 14; the Ashuelot reported 6; the Alert, 7; the Swatara only 2, and the Palos, 3. The single case of torticollis happened on the Richmond, and that of tuberculosis on the Swatara, the latter resulting in death.

LOCAL DISEASES.

Seven hundred and seventy-four cases make the aggregate of the cases falling within this division, a ratio of 711.40 per M, or 154.51 less than in the preceding year.

DISEASES OF THE NERVOUS SYSTEM.

Thirty-nine cases make the total of this group, the ratio being 35.84 the reduction being 5.02 per M. Four were invalided to hospital, the invaliding rate being 1.54 per M less than in 1879. The loss of service amounted to 346 days, a daily average of nearly 1. The following were the case streated: cephalalgia, 17; cerebri congestio, 1; epilepsia, 3; insolatio, 3; myalgia, 1; nausea marina, 2; neuralgia, 9; neurasthenia 1; paralysis, 1; vertigo, 1. The frequency on board the various ships is expressed in the following ratios per M: Swatara, 14.70; Alert, 8.27; Richmond, 6.42; Monocacy, 4.59; Palos, 1.83. No cases coming within this class were admitted on the sick-list of the Ashuelot.

Cephalalgia.—Two-thirds of the cases of this affection occurred on the Swatara, viz, 12; 3 were admitted on the Richmond, and 2 on the Monocacy. The ratio per M given by the 17 cases was 15.62, a large increase over that of last year of 10.41 per M, coming, as above stated, from the Swatara; one case was invalided to hospital.

Epilepsia.—Three cases of epilepsy were admitted, equaling the number of last rear, the ratio only slightly differing; 1 case occurring on the Richmond was invalided to hospital.

Nauseau marina.—Sea-sickness, in 1879, gave 9 admissions to the sick-list, a ratio of 7.82 per M. During the present year but 2 were admitted, the ratio per M being 1.83.

Neuralgia.—The admissions under this head numbered 9, in the ratio of 8.27 per M, a reduction from that of last year of 5.64 per M. The average duration of the cases was 7.33, and the time lost was 66 days. The Alert contributed the largest ratio, 8.27 per M.

Neurasthenia.—This case also was reported from the Alert, and was invalided to hospital.

DISEASES OF THE EYE.

This class included 18 cases of conjunctivitis and 1 of ophthalmia, the ratio being 17.46 per M, a falling off from that of last year of 6.01 per M. The average period of treatment was 12.68 days; that of the *cases of conjunctivitis*, 11.70, and of ophthalmia, 30 days. The latter

was invalided to hospital, as were 4 cases of the former. The following are the ratios per M of their occurrence on the ships: Richmond, 10.11; Alert, 2.75; Swatara and Palos, 1.83; Ashuelot, .91; the Monocacy reporting no cases.

DISEASES OF THE EAR

were confined to 2 vessels, the Richmond and Swatara, and but 3 cases were reported, giving a ratio of 2.75 per M, and showing a reduction of 8.35 per M from that of 1879.

DISEASES OF THE CIRCULATORY ORGANS.

The aggregate of the admissions in this class was 18, a ratio of 16.53 per M, an increase of 7.84 per M over that of last year; 6 cases were invalided, making a ratio per M of 5.51, an increase over that of the previous year of 3.78 per M. The loss of service was 127 days, and the average duration of treatment 7.05 days. The cases admitted were: hypertrophy of the heart, 1; palpitation, 10; pericarditis, 1; syncope, 5; varix, 1. The largest proportion of cases was furnished by the Swatara, in the ratio per M of 9.19; there were no admissions on the Ashuelot and Palos

DISEASES OF THE RESPIRATORY ORGANS.

There were entered on the sick-list 57 cases of these diseases, which is in the ratio of 52.38 per M, and, compared with last year, shows the large reduction of 70.22 per M; 7 cases, a ratio per M of 6.43, were invalided to hospital, a reduction of 8.35 per M from the previous year. The cases were: asphyxia, 1; bronchitis, 33; catarrhus, 17; laryngitis, 1; phthisis pneumonica, 4; pleuritis, 1. The following ratios per M show their distribution: Richmond, 14.70; Swatara, 12.86; Alert, 8.27; Ashuelot, 6.42; Monocacy, 5.51; Palos, 4.59.

Bronchitis.—The admissions for acute bronchitis during the year were 27, a ratio of 24.81 per M, and for chronic bronchitis 6, a ratio of 5.51 per M; the reduction from the numbers of last year being 15.19 per M for the former, and 1.40 per M for the latter. The loss of service for both diseases was 181 days, about one-third that of last year; 26 cases were invalided to hospital. The greatest number of cases were contributed by the Swatara, 11; there were 8 on the Richmond, and small numbers on the other ships.

Phthisis pneumonica.—One case of this affection was reported from each of the vessels of the squadron except the Swatara and Palos, and all were invalided to hospital.

DISEASES OF THE DIGESTIVE ORGANS.

There were entered on the sick-list 222 cases of diseases falling under this head, the ratio per M being 204.04, very nearly that of last year, there having been a falling off of but 6.39 per M. Nine were invalided, the ratio being 8.27 per M, somewhat more than half that of 1879. The total loss of service was 1,074 days, 260 less than that of the preceding year.

The following are the ratios per M showing the comparative sick-rates of the different ships: Swatara, 92.83; Richmond, 46.87; Alert, 22.05; Monocacy, 20.22; Ashuelot, 13.78; Palos, 8.27.

DISEASES OF THE GENITO-URINARY SYSTEM.

But 75 cases appear under this head, making a ratio of 68.93 per M, a reduction from last year of 27.89 per M. The invaliding rate was 7.35,

lost 51 less than that of the preceding year. The loss of service was 1,134, or 309 less than in 1879. The reduction in the admission occurred chiefly under the head of gonorrhœa, which last year numbered 41, while during the present year they were but 11. The ratios per M of these diseases, as they occurred on the various ships, are as follows: Richmond, 2.39; Swatara, 13.62; Monocacy, 12.05; Alert, 10.11; Ashuelot, 4.59; Palos, 1.53.

Chancroides.—The 9 cases reported of chancroides occurred on two vessels, the Richmond and Swatara: 1 of the 3 noted in the latter ship was invalided. The average duration of the cases was 25.44 days. The ratio per M furnished this year, 9.56, differs but little from that of 1879, which was 8.27 per M.

Gonorrhœa.—The Ashuelot and Palos returned no cases of this disease, while the Alert reported but 1. The Swatara furnished 5, the Richmond 3, and the Monocacy 2. The ratio was less by 25.54 per M than that of the previous year, and the loss of service was less by 446.

Orchitis.—There were 31 cases of this under treatment during the year, giving a ratio of 28.48, a falling off from that of last year to the small extent of 1.08 per M. The vessels reporting the largest number of cases were the Richmond and Alert.

DISEASES OF THE LOCOMOTIVE SYSTEM.

Two ships, the Ashuelot and Palos, made no returns under this head; the Alert reported 3, the Swatara 2, and the Monocacy and Richmond each 1. The ratio furnished by the 7 cases was less by 1.41 per M than that of the preceding year.

DISEASES OF THE INTEGUMENTARY SYSTEM.

One hundred and two cases under this head give a ratio of 93.74 per M, which shows a reduction of the sick-rate, comparing it with that of last year, of 9.73 per M. The prevalence of the different affections noted varied but little from that of last year: the Swatara reported the largest ratio, 39.52, and the Palos the smallest, 18.3 per M.

Poisons.—Under this head is noted 21 cases of alcoholic poisoning, and 2 of poisoned wounds, making a ratio of 21.13 per M, somewhat larger than that of 1879, which was 18.26 per M. The loss of service was 122 days, 54 more than that of the preceding year. The Ashuelot and Monocacy furnished all but two of the cases, the Richmond and the Alert each reporting 1.

DISEASES FROM VIOLENCE.

In this class were recorded 180 cases, giving a ratio of 165.43 per M, a falling off from that of last year of 13.79 per M. The loss of service was also less by about 300 days. There were 2 deaths from drowning, and 72 were invalided to hospital. The Swatara contributed the largest number of cases, the ratio being 71.69 per M; the Richmond reached 41.36 per M, with smaller rates on the other ships.

TABLE I.—*Showing the force on each ship, the number admitted and discharged, number of days under treatment, and average per M of force on the Asiatic Station.*

Vessels.	Strength.	Strength corrected for time.	Admitted.						Discharged.					Number of sick-days.	Average number of days under treatment.	Daily average number of sick.		Number admitted per M of strength.
			From last year.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.	Cured.	Invalided.		Died.	Total.	Continued.		Absolute.	Per M of strength.	
										To the hospital.	From the service.							
Richmond, 2d rate, 2,000 tons; wood, screw; service, 366 days	364	364	6	54	45	77	59	241	221	15	.....	.....	236	5	2,273	6.21	5.70	221.50
Swatara, 3d rate, 910 tons; wood, screw; service, 366 days	213	213	4	89	82	117	55	347	320	21	.....	2	343	4	2,324	6.34	5.81	318.93
Monocacy, 3d rate, 747 tons; iron, paddle; service, 366 days	173	173	3	37	29	28	31	128	115	8	1	1	125	3	1,213	3.31	3.04	117.04
Ashuelot, 3d rate, 786 tons; iron, paddle; service, 366 days	123	123	.....	.....	11	38	37	86	70	5	.....	.....	84	2	789	2.15	1.97	70.04
Palos, 4th rate, 306 tons; wood, screw; service, 366 days	52	52	.....	8	8	18	8	40	39	1	.....	.....	40	.....	245	.66	.60	36.76
Alert, 3d rate, 641 tons; iron, screw; service, 366 days	163	163	4	41	28	35	13	121	98	22	.....	.....	120	1	993	2.71	2.40	111.21
Total	1,088	1,088	17	229	203	311	203	963	872	72	1	3	948	15	7,837	21.41	19.67	885.11

TABLE II.—*Showing the number of cases, the discharged, the invalided and the dead, for each disease, and their ratio per M of strength, on the Asiatic Station.*

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		
									To the hospital.		From the service.				
	Number.	Per M of force.		Absolute number.	Ratio per M of force.		Number.	Per M of force.	Number.	Per M of force.	Number.	Per M of force.	Number.	Per M of force.	Remaining.
GENERAL DISEASES.															
1.—*Zymotic diseases.*															
Erysipelas	1	.91	5	.01	.....	5	.....	.....	1	.91	.....	.....	.....	.....	.....
Febricula	4	3.67	9	.02	.01	2.25	4	3.67	.....	.....	.....	.....	.....	.....	.....
Febris continua simplex	7	6.43	20	.05	.04	2.85	7	6.43	.....	.....	.....	.....	.....	.....	.....
Febris enterica	2	1.83	50	.13	.11	25	1	.91	1	.91	.....	.....	.....	.....	.....
Febris intermittens	53	48.71	231	.63	.57	4.35	52	47.80	1	.91	.....	.....	.....	.....	.....
Febris remittens	9	8.27	43	.11	.10	4.77	7	6.43	1	.91	.....	.....	.....	.....	1
Roseola	2	1.83	5	.01	.....	2.5	2	1.83	.....	.....	.....	.....	.....	.....	.....
Varicella	1	.91	1	.....	.....	1	.....	.....	1	.91	.....	.....	.....	.....	.....
Varioloides	2	1.83	4	.01	.....	2	.....	.....	2	1.83	.....	.....	.....	.....	.....
Total	81	74.44	368	1	.91	4.54	73	67.09	7	6.43	.....	.....	.....	.....	1
2.—*Constitutional diseases.*															
Adynamia	7	6.43	53	.14	.12	7.57	6	5.51	1	.91	.....	.....	.....	.....	.....
Lumbago	2	1.83	12	.03	.02	6	2	1.83	.....	.....	.....	.....	.....	.....	.....
Podagra	1	.91	5	.01	.....	5	1	.91	.....	.....	.....	.....	.....	.....	.....
Rheumatismus acutus	30	27.57	377	1	.91	12.56	25	22.97	5	4.59	.....	.....	.....	.....	.....
Rheumatismus chronicus	17	15.62	184	.50	.45	10.82	16	14.70	1	.91	.....	.....	.....	.....	.....
Sciatica	2	1.83	15	.04	.03	7.5	1	.91	1	.91	.....	.....	.....	.....	.....
Syphilis primitiva	21	19.30	371	1.01	.92	17.66	18	16.53	1	.91	.....	.....	.....	.....	2
Syphilis consecutiva	26	23.89	412	1.12	1.02	15.84	21	19.30	3	2.75	.....	.....	.....	.....	2
Torticollis	1	.91	10	.02	.01	10	1	.91	.....	.....	.....	.....	.....	.....	.....
Tuberculosis	1	.91	50	.15	.13	50	.....	.....	.....	.....	.....	.....	1	.91	.....
Total	108	99.26	1,495	4.08	3.75	13.84	91	83.63	12	11.02	.....	.....	1	.91	4
LOCAL DISEASES.															
1.—*Diseases of the nervous system.*															
Cephalalgia	17	15.62	81	.22	.20	4.76	16	14.70	1	.91	.....	.....	.....	.....	.....
Cerebri congestio	1	.91	146	.39	.35	146	.....	.....	1	.91	.....	.....	.....	.....	.....
Epilepsia	3	2.75	33	.09	.08	11	2	1.83	1	.91	.....	.....	.....	.....	.....
Insolatio	3	2.75	7	.01	.....	2.33	3	2.74	.....	.....	.....	.....	.....	.....	.....

Myalgia	1	.91	2			2	1	.91							
Nausea marina	2	1.83	3			1.5	2	1.83							
Neuralgia	9	8.27	66	.18	.16	7.33	9	8.27							
Neurasthenia	1	.91	1			1			1	.91					
Paralysis	1	.91	5	.01		5	1	.91							
Vertigo	1	.91	2			2	1	.91							
Total	39	35.84	346	.94	.86	8.87	35	32.16	4	3.67					
2.—Diseases of the eye.															
Conjunctivtis	18	16.53	211	.57	.52	11.72	14	12.86	4	3.67					
Ophthalmia	1	.91	30	.08	.07	30			1	.91					
Total	19	17.46	241	.65	.59	12.68	14	12.86	5	4.59					
3.—Diseases of the ear.															
Otalgia	2	1.83	7	.01		3.5	2	1.83							
Surditas	1	.91	2			2			1	.91					
Total	3	2.75	9	.02	.01	3	2	1.83	1	.91					
4.—Diseases of the teeth.															
Odontalgia	5	4.59	15	.04	.03	3	5	4.59							
Total	5	4.59	15	.04	.03	3	5	4.59							
5.—Diseases of the circulatory system.															
Hypertrophia cordis	1	.91	18	.04	.03	18			1	.91					
Palpitatio	10	9.19	69	.18	.16	6.90	7	6.43	3	2.75					
Pericarditis	1	.91	14	.03	.02	14			1	.91					
Syncope	5	4.58	21	.05	.03	4.20	5	5.58							
Varix	1	.91	5	.01		5			1	.91					
Total	18	16.53	127	.34	.31	7.05	12	11.02	6	5.51					
6.—Diseases of the absorbent system.															
Adenitis	20	18.38	478	1.33	1.22	23.9	19	17.46	1	.91					
Total	20	18.38	478	1.33	1.22	23.9	19	17.46	1	.91					
7.—Diseases of the respiratory system.															
Asphyxia	1	.91	1			1	1	.91							
Bronchitis acuta	27	24.81	130	.35	.32	4.81	23	21.13	1	.91	1	.91			2
Bronchitis chronica	6	5.51	51	.13	.11	8.5	3	2.75	2	1.83					1
Catarrhus	17	15.61	54	.14	.11	3.18	17	15.61							
Laryngitis	1	.91	4	.01		4	1	.91							
Phthisis pneumonica chronica	4	3.67	68	.18	.16	17			4	3.67					
Pleuritis	1	.91	4	.01		4	1	.91							
Total	57	52.38	312	.85	.78	5.47	46	42.27	7	6.43	1	.91			3

TABLE II.—*Showing the number of cases, the discharged, the invalided and the dead, for each disease, &c.*—Continued.

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Remaining.
									To hospital.		From the service.				
	Number.	Per M of force.		Absolute number.	Ratio per M of force.		Number.	Per M of force.	Number.	Per M of force.	Number.	Per M of force.	Number.	Per M of force.	
LOCAL DISEASES—Continued.															
8.—*Diseases of the digestive system.*															
Cholera morbus	41	40.44	108	.20	.20	2.45	44	40.44							
Colics	11	12.86	40	.10	.09	3.63	11	12.86							
Colica pictonum	1	.91	11	.03	.03	11.	1	.91							
Constipatio	4	3.67	16	.04	.04	4.	4	3.67							
Diarrhœa acuta	66	60.66	293	.77	.70	4.43	64	58.82	2	1.83					
Diarrhœa chronica	1	.91	1	.01	.01	1.			1	.91					
Dysenteria acuta	28	25.72	182	.49	.46	6.5	27	24.81			1	.91			
Dysenteria chronica	2	1.83	22	.06	.05	11.	2	1.83							
Dyspepsia	6	5.51	96	.26	.24	16.	6	5.51							
Epiploïtis	1	.91	11	.03	.03	11.	1	.91							
Gastritis	3	2.75	33	.09	.08	11.	3	2.75							
Gastrodynia	1	.91	6	.02	.01	6.	1	.91							
Gastroenteritis	3	2.75	24	.07	.06	8.	3	2.75							
Hepatitis acuta	6	5.51	48	.13	.12	8.	6	5.51							
Hepatitis chronica	5	4.59	60	.16	.15	12.	4	3.67			1	.91			
Hernia	3	2.75	30	.08	.07	10.	3	2.75							
Ileus	3	2.75	45	.12	.11	15.	3	2.75							
Jaundice	1	.91	5	.01	.01	5.	1	.91							
Odontalgia	23	21.13	154	.42	.38	6.69	22	20.22	1	.91					
Peritonitis	4	3.67	10	.02	.01	2.6	4	3.67							
Total	222	204.04	1,071	2.93	2.69	4.83	212	194.94	9	8.27	1	.91			1
9. *Diseases of the genito urinary system.*															
Chancre	9	8.27	99	.27	.25	11.	7	6.43	1	.91					
Gonorrhœa	4	3.67	24	.07	.06	6.	4	3.67							
Orchitis	6	5.51	61	.17	.15	10.17	6	5.51							
Syphilis mitis	11	10.11	194	.53	.49	17.64	10	9.19	1	.91					
Urethritis	1	.91	11	.03	.03	11.	1	.91							

Orchitis	31	28.48	359	.98	.89	11.58	31	28.48							
Phymosis	3	2.75	156	.42	.38	52	3	2.75							
Urethræ strictura	9	8.27	85	.23	.21	9.44	3	2.75	6	5.51					
Total	75	68.93	1,134	3.09	2.84	15.12	66	60.60	8	7.35					1
10.—*Diseases of the locomotive system.*															
Arthritis	2	1.83	24	.06	.05	12	2	1.83							
Hydrops articulorum	1	.91	8	.02	.01	8	1	.91							
Periostitis	2	1.83	15	.04	.03	7.5	1	.91	1	.91					
Synovitis	2	1.83	14	.03	.02	7	2	1.83							
Total	7	6.43	61	.16	.14	8.71	6	5.51	1	.91					
11.—*Diseases of the integumentary system.*															
Abscessus	24	22.04	226	.61	.56	9.41	23	21.13	1	.91					
Acne	3	2.75	26	.07	.06	8.66	3	2.75							
Anthrax	1	.91	3			3	1	.91							
Ecthyma	1	.91	1			1	1	.91							
Eczema	2	1.83	14	.03	.02	7	2	1.83							
Furunculus	37	34	147	.40	.36	3.97	37	34							
Herpes	2	1.83	2			1	1	.91	1	.91					
Onychia	3	2.75	9	.02	.01	3	3	2.75							
Paronychia	11	10.11	77	.21	.19	7	11	10.11							
Porrigo	1	.91	29	.07	.06	29									1
Purpura simplex	1	.91	4	.01		4	1	.91							
Psoriasis	1	.91	5	.01		5	1	.91							
Rupia	1	.91	8	.02	.01	8	1	.91							
Scabies	1	.91	4	.01		4	1	.91							
Ulcus	11	10.11	99	.27	.24	9	11	10.11							
Urticaria	2	1.83	7	.01		3.5	2	1.83							
Total	102	93.74	610	1.80	1.65	6.48	99	90.99	2	1.83					1
12.—*Non-malignant tumors and cysts.*															
Adenoma	3	2.75	44	.12	.11	14.66	3	2.75							
Lipoma	1	.91	4	.01		4	1	.91							
Total	4	3.67	48	.13	.11	12	4	3.67							
POISONS.															
Alcoholismus	17	15.62	95	.25	.22	5.58	15	13.78	1	.91					1
Delirium tremens	1	.91	3			3	1	.91							
Ebriositas	3	2.75	5	.01		1.66	3	2.75							
Virus venenatum	2	1.83	19	.05	.04	9.5	2	1.83							
Total	23	21.13	122	.33	.30	5.30	21	19.29	1	.91					1

but .51 less than that of the preceding year. The loss of service was 1,134, or 300 less than in 1879. The reduction in the admission occurred chiefly under the head of gonorrhœa, which last year numbered 41, while during the present year they were but 11. The ratios per M of these diseases, as they occurred on the various ships, are as follows: Richmond, 23.89; Swatara, 13.62; Monocacy, 12.05; Alert, 10.11; Ashuelot, 4.59; Palos, 1.83.

Chancroides.—The 9 cases reported of chancroides occurred on two vessels, the Richmond and Swatara; 1 of the 3 noted in the latter ship, was invalided. The average duration of the cases was 25.44 days. The ratio per M furnished this year, 9.56, differs but little from that of 1879, which was 8.27 per M.

Gonorrhœa.—The Ashuelot and Palos returned no cases of this disease, while the Alert reported but 1. The Swatara furnished 5, the Richmond 3, and the Monocacy 2. The ratio was less by 25.54 per M than that of the previous year, and the loss of service was less by 446.

Orchitis.—There were 31 cases of this under treatment during the year, giving a ratio of 28.48, a falling off from that of last year to the small extent of 1.08 per M. The vessels reporting the largest number of cases were the Richmond and Alert.

DISEASES OF THE LOCOMOTIVE SYSTEM.

Two ships, the Ashuelot and Palos, made no returns under this head; the Alert reported 3, the Swatara 2, and the Monocacy and Richmond each 1. The ratio furnished by the 7 cases was less by 1.41 per M than that of the preceding year.

DISEASES OF THE INTEGUMENTARY SYSTEM.

One hundred and two cases under this head give a ratio of 93.74 per M, which shows a reduction of the sick-rate, comparing it with that of last year, of 9.73 per M. The prevalence of the different affections noted varied but little from that of last year; the Swatara reported the largest ratio, 39.52, and the Palos the smallest, 18.3 per M.

Poisons.—Under this head is noted 21 cases of alcoholic poisoning, and 2 of poisoned wounds, making a ratio of 21.13 per M, somewhat larger than that of 1879, which was 18.26 per M. The loss of service was 122 days, 54 more than that of the preceding year. The Ashuelot and Monocacy furnished all but two of the cases, the Richmond and the Alert each reporting 1.

DISEASES FROM VIOLENCE.

In this class were recorded 180 cases, giving a ratio of 165.43 per M, a falling off from that of last year of 13.79 per M. The loss of service was also less by about 300 days. There were 2 deaths from drowning, and 72 were invalided to hospital. The Swatara contributed the largest number of cases, the ratio being 71.69 per M; the Richmond reached 41.36 per M, with smaller rates on the other ships.

TABLE I.—*Showing the force on each ship, the number admitted and discharged, number of days under treatment, and average per M of force on the Asiatic Station.*

Vessels.	Strength.	Strength corrected for time.	Admitted.						Discharged.					Continued.	Number of sick-days.	Average number of days under treatment.	Daily average number of sick.		
			From last year.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.	Cured.	Invalided.		Died.	Total.				Absolute.	Per M of strength.	Number admitted per M of strength.
										To the hospital.	From the service.								
Richmond, 2d rate, 2,000 tons; wood, screw; service, 366 days	364	364	6	54	45	77	59	241	221	15	.....	.....	236	5	2,273	9.43	6.21	5.70	221.50
Swatara, 3d rate, 910 tons; wood, screw; service, 366 days	213	213	4	89	82	117	55	347	320	21	.....	2	343	4	2,324	6.69	6.34	5.81	318.93
Monocacy, 3d rate, 747 tons; iron, paddle; service, 366 days	173	173	3	37	29	28	31	128	115	8	1	1	125	3	1,213	9.47	3.31	3.04	117.64
Ashuelot, 3d rate, 786 tons; iron, paddle; service, 366 days	123	123	....	.....	11	38	37	86	79	5	.....	....	84	2	789	9.17	2.15	1.97	79.04
Palos, 4th rate, 306 tons; wood, screw; service, 366 days	52	52	....	8	8	18	8	40	39	1	.....	....	40	....	245	6.12	.66	.60	36.76
Alert, 3d rate, 541 tons; iron, screw; service, 366 days	163	163	4	41	28	35	13	121	98	22	.....	..	120	1	995	8.20	2.71	2.49	111.21
Total	1,088	1,088	17	229	203	311	203	963	872	72	1	3	948	15	7,837	8.13	21.41	19.67	885.11

TABLE II.—*Showing the number of cases, the discharged, the invalided and the dead, for each disease, and their ratio per M of strength, on the Asiatic Station.*

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Remaining.
									To the hospital.		From the service.				
	Number.	Per M of force.		Absolute number.	Ratio per M of force.		Number.	Per M of force.	Number.	Per M of force.	Number.	Per M of force.	Number.	Per M of force.	
GENERAL DISEASES.															
1.—Zymotic diseases.															
Erysipelas	1	.91	5	.01	.....	5	.....	.....	1	.91	.....	.....	.....	.....	.....
Febricula	4	3.67	9	.02	.01	2.25	4	3.67	.....	.....	.....	.....	.....	.....	.....
Febris continua simplex	7	6.43	20	.05	.04	2.85	7	6.43	.....	.....	.....	.....	.....	.....	.....
Febris enterica	2	1.83	50	.13	.11	25	1	.91	1	.91	.....	.....	.....	.....	.....
Febris intermittens	53	48.71	231	.63	.57	4.35	52	47.80	1	.91	.....	.....	.....	.....	.....
Febris remittens	9	8.27	43	.11	.10	4.77	7	6.43	1	.91	.....	.....	.....	.....	1
Roseola	2	1.83	5	.01	.....	2.5	2	1.83	.....	.....	.....	.....	.....	.....	.....
Varicella	1	.91	1	.....	.....	1	.....	.....	1	.91	.....	.....	.....	.....	.....
Varioloides	2	1.83	4	.01	.....	2	.....	.....	2	1.83	.....	.....	.....	.....	.....
Total	81	74.44	368	1	.91	4.54	73	67.09	7	6.43	.....	.....	.....	.....	1
2.—Constitutional diseases.															
Adynamia	7	6.43	53	.14	.12	7.57	6	5.51	1	.91	.....	.....	.....	.....	.....
Lumbago	2	1.83	12	.03	.02	6	2	1.83	.....	.....	.....	.....	.....	.....	.....
Podagra	1	.91	5	.01	.....	5	1	.91	.....	.....	.....	.....	.....	.....	.....
Rheumatismus acutus	30	27.57	377	1	.91	12.56	25	22.97	5	4.59	.....	.....	.....	.....	.....
Rheumatismus chronicus	17	15.62	184	.50	.45	10.82	16	14.70	1	.91	.....	.....	.....	.....	.....
Sciatica	2	1.83	15	.04	.03	7.5	1	.91	1	.91	.....	.....	.....	.....	.....
Syphilis primitiva	21	19.30	371	1.01	.92	17.66	18	16.53	1	.91	.....	.....	.....	.....	2
Syphilis consecutiva	26	23.89	412	1.12	1.02	15.84	21	19.30	3	2.75	.....	.....	.....	.....	2
Torticollis	1	.91	10	.02	.01	10	1	.91	.....	.....	.....	.....	.....	.....	.....
Tuberculosis	1	.91	56	.15	.13	56	.....	.....	.....	.....	.....	.....	1	.91	.....
Total	108	99.26	1,495	4.08	3.75	13.84	91	83.63	12	11.02	.....	.....	1	.91	4
LOCAL DISEASES.															
1.—Diseases of the nervous system.															
Cephalalgia	17	15.62	81	.22	.20	4.76	16	14.70	1	.91	.....	.....	.....	.....	.....
Cerebri congestio	1	.91	146	.39	.35	146	.....	.....	1	.91	.....	.....	.....	.....	.....
Epilepsia	3	2.75	33	.09	.08	11	2	1.83	1	.91	.....	.....	.....	.....	.....
Insolatio	3	2.75	7	.01	.....	2.33	3	2.74	.....	.....	.....	.....	.....	.....	.....

Myalgia	1	.91	2			2	1	.91							
Nausea marina	2	1.83	3			1.5	2	1.83							
Neuralgia	9	8.27	66	.18	.16	7.33	9	8.27							
Neurasthenia	1	.91	1			1			1	.91					
Paralysis	1	.91	5	.01		5	1	.91							
Vertigo	1	.91	2			2	1	.91							
Total	39	35.84	346	.94	.86	8.87	35	32.16	4	3.67					
2.—Diseases of the eye.															
Conjunctivtis	18	16.53	211	.57	.52	11.72	14	12.86	4	3.67					
Ophthalmia	1	.91	30	.08	.07	30			1	.91					
Total	19	17.46	241	.65	.59	12.68	14	12.86	5	4.59					
3.—Diseases of the ear.															
Otalgia	2	1.83	7	.01		3.5	2	1.83							
Surditas	1	.91	2			2			1	.91					
Total	3	2.75	9	.02	.01	3	2	1.83	1	.91					
4.—Diseases of the teeth.															
Odontalgia	5	4.59	15	.04	.03	3	5	4.59							
Total	5	4.59	15	.04	.03	3	5	4.59							
5.—Diseases of the circulatory system.															
Hypertrophia cordis	1	.91	18	.04	.03	18			1	.91					
Palpitatio	10	9.19	69	.18	.16	6.90	7	6.43	3	2.75					
Pericarditis	1	.91	14	.03	.02	14			1	.91					
Syncope	5	4.58	21	.05	.03	4.20	5	5.58							
Varix	1	.91	5	.01		5			1	.91					
Total	18	16.53	127	.34	.31	7.05	12	11.02	6	5.51					
6.—Diseases of the absorbent system.															
Adenitis	20	18.38	478	1.33	1.22	23.9	19	17.46	1	.91					
Total	20	18.38	478	1.33	1.22	23.9	19	17.46	1	.91					
7.—Diseases of the respiratory system.															
Asphyxia	1	.91	1			1	1	.91							
Bronchitis acuta	27	24.81	130	.35	.32	4.81	23	21.13	1	.91	1	.91			2
Bronchitis chronica	6	5.51	51	.13	.11	8.5	3	2.75	2	1.83					1
Catarrhus	17	15.61	54	.14	.11	3.18	17	15.61							
Laryngitis	1	.91	4	.01		4	1	.91							
Phthisis pneumonica chronica	4	3.67	68	.18	.16	17			4	3.67					
Pleuritis	1	.91	4	.01		4	1	.91							
Total	57	52.38	312	.85	.78	5.47	46	42.27	7	6.43	1	.91			3

TABLE II.—*Showing the number of cases, the discharged, the invalided and the dead, for each disease, &c.*—Continued.

Diseases and injuries.	Cases. Number.	Cases. Per M of force.	Number of sick-days.	Average number of men sick daily. Absolute number.	Average number of men sick daily. Ratio per M of force.	Average number of days under treatment.	Discharged to duty. Number.	Discharged to duty. Per M of force.	Invalided. To hospital. Number.	Invalided. To hospital. Per M of force.	Invalided. From the service. Number.	Invalided. From the service. Per M of force.	Died. Number.	Died. Per M of force.	Remaining.
LOCAL DISEASES—Continued.															
8.—Diseases of the digestive system.															
Cholera morbus	44	40.44	168	.29	.26	2.45	44	40.44	.....	.....	.....	.....	.....	.....	.....
Colica	14	12.86	40	.10	.09	2.85	14	12.86	.....	.....	.....	.....	.....	.....	.....
Colica pictonum	1	.91	2	.....	.....	2	1	.91	.....	.....	.....	.....	.....	.....	.....
Constipatio	4	3.67	16	.04	.03	4	4	3.67	.....	.....	.....	.....	.....	.....	.....
Diarrhœa acuta	66	60.66	283	.77	.70	4.28	64	58.82	2	1.83	.....	.....	.....	.....	.....
Diarrhœa chronica	1	.91	1	.....	.....	1	.....	.....	1	.91	.....	.....	.....	.....	.....
Dysenteria acuta	28	25.72	182	.49	.45	6.5	27	24.81	1	.91	.....	.....	.....	.....	.....
Dysenteria chronica	2	1.83	22	.06	.05	11	2	1.83	.....	.....	.....	.....	.....	.....	.....
Dyspepsia	6	5.51	34	.09	.08	5.66	6	5.51	.....	.....	.....	.....	.....	.....	.....
Emesis	1	.91	2	.....	.....	2	1	.91	.....	.....	.....	.....	.....	.....	.....
Fauces ulcerosa	1	.91	2	.....	.....	2	1	.91	.....	.....	.....	.....	.....	.....	.....
Gastritis	3	2.75	8	.02	.01	2.66	3	2.75	.....	.....	.....	.....	.....	.....	.....
Hæmorrhois	6	5.51	24	.06	.05	4	6	5.51	.....	.....	.....	.....	.....	.....	.....
Hepatitis acuta	3	2.75	13	.03	.02	4.33	1	.91	1	.91	.....	.....	.....	.....	1
Hernia	8	7.35	120	.32	.29	15	6	5.51	2	1.83	.....	.....	.....	.....	.....
Icterus	3	2.75	36	.09	.08	12	2	1.83	1	.91	.....	.....	.....	.....	.....
Pharyngitis	3	2.75	12	.03	.02	4	3	2.75	.....	.....	.....	.....	.....	.....	.....
Stomalitis	1	.91	5	.01	.....	5	1	.91	.....	.....	.....	.....	.....	.....	.....
Tonsilitis	23	21.13	154	.42	.38	6.69	22	20.22	1	.91	.....	.....	.....	.....	.....
Vermes	4	3.67	10	.02	.01	2.5	4	3.67	.....	.....	.....	.....	.....	.....	.....
Total	222	204.04	1,074	2.93	2.69	4.83	212	194.84	9	8.27	.....	.....	.....	.....	1
9.—Diseases of the genito-urinary system.															
Chancroides	9	8.27	229	.62	.56	25.44	7	6.43	1	.91	.....	.....	.....	.....	1
Cystitis	4	3.67	25	.06	.05	6.25	4	3.67	.....	.....	.....	.....	.....	.....	.....
Epididymitis	5	4.59	61	.16	.14	12.2	5	4.59	.....	.....	.....	.....	.....	.....	.....
Gonorrhœa	11	10.11	195	.53	.48	17.72	10	9.19	1	.91	.....	.....	.....	.....	.....
Hydrocele	1	.91	5	.01	.....	5	1	.91	.....	.....	.....	.....	.....	.....	.....
Nephritis	2	1.82	10	.04	.03	10	2	1.82	.....	.....	.....	.....	.....	.....	.....

Orchitis	31	28.48	359	.98	.80	11.58	31	28.48							
Phymosis	3	2.75	156	.42	.38	52	3	2.75							
Urethræ strictura	9	8.27	85	.23	.21	9.44	3	2.75	6	5.51					
Total	75	68.93	1,134	3.09	2.84	15.12	66	60.66	8	7.35					1
10.—*Diseases of the locomotive system.*															
Arthritis	2	1.83	24	.06	.05	12	2	1.83							
Hydrops articulorum	1	.91	8	.02	.01	8	1	.91							
Periostitis	2	1.83	15	.04	.03	7.5	1	.91	1	.91					
Synovitis	2	1.83	14	.03	.02	7	2	1.83							
Total	7	6.43	61	.16	.14	8.71	6	5.51	1	.91					
11.—*Diseases of the integumentary system.*															
Abscessus	24	22.04	226	.61	.56	9.41	23	21.13	1	.91					
Acne	3	2.75	26	.07	.06	8.66	3	2.75							
Anthrax	1	.91	3			3	1	.91							
Ecthyma	1	.91	1			1	1	.91							
Eczema	2	1.83	14	.03	.02	7	2	1.83							
Furunculus	37	34	147	.40	.36	3.97	37	34							
Herpes	2	1.83	2			1	1	.91	1	.91					
Onychia	3	2.75	9	.02	.01	3	3	2.75							
Paronychia	11	10.11	77	.21	.19	7	11	10.11							
Porrigo	1	.91	29	.07	.06	29									1
Purpura simplex	1	.91	4	.01		4	1	.91							
Psoriasis	1	.91	5	.01		5	1	.91							
Rupia	1	.91	8	.02	.01	8	1	.91							
Scabies	1	.91	4	.01		4	1	.91							
Ulcus	11	10.11	99	.27	.24	9	11	10.11							
Urticaria	2	1.83	7	.01		3.5	2	1.83							
Total	102	93.74	610	1.80	1.65	6.48	99	90.99	2	1.83					1
12.—*Non-malignant tumors and cysts.*															
Adenoma	3	2.75	44	.12	.11	14.66	3	2.75							
Lipoma	1	.91	4	.01		4	1	.91							
Total	4	3.67	48	.13	.11	12	4	3.67							
POISONS.															
Alcoholismus	17	15.62	95	.25	.22	5.58	15	13.78	1	.91					1
Delirium tremens	1	.91	3			3	1	.91							
Ebriositas	3	2.75	5	.01		1.66	3	2.75							
Virus venenatum	2	1.83	19	.05	.04	9.5	2	1.83							
Total	23	21.13	122	.33	.30	5.30	21	19.29	1	.91					1

TABLE II.—*Showing the number of cases, the discharged, the invalided and the dead, for each disease, &c.*—Continued.

Diseases and injuries.	Cases.		Number of sick-days.	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Remaining.
									To hospital.		From the service.				
	Number.	Per M of force.		Absolute number.	Ratio per M of force.		Number.	Per M of force.	Number.	Per M of force.	Number.	Per M of force.	Number.	Per M of force.	
VIOLENT DISEASES AND DEATHS.															
Abrasio	3	2.75	47	.12	.11	15.66	3	2.75	.....	.....	.....	.....	.....	.....	.....
Ambustio	7	6.43	55	.15	.13	7.85	7	6.43	.....	.....	.....	.....	.....	.....	.....
Contusio	57	52.38	304	.83	.76	5.33	54	49.62	2	1.83	.....	.....	.....	.....	1
Fractura	5	4.59	112	.30	.27	22.4	2	1.83	3	2.75	.....	.....	.....	.....	.....
Luxatio	6	5.51	40	.10	.09	6.66	6	5.51	.....	.....	.....	.....	.....	.....	.....
Stremma	30	27.57	163	.44	.40	5.43	30	27.57	.....	.....	.....	.....	.....	.....	.....
Submersio	2	1.83	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	2.75	.....
Vulnus contusum	33	30.33	285	.77	.70	8.63	32	29.42	.....	.....	.....	.....	.....	.....	1
Vulnus incisum	17	15.62	130	.35	.32	7.64	16	14.71	.....	.....	.....	.....	.....	.....	1
Vulnus laceratum	17	15.62	195	.53	.48	11.46	14	12.86	3	2.75	.....	.....	.....	.....	.....
Vulnus punctum	3	2.75	15	.04	.03	5	3	2.75	.....	.....	.....	.....	.....	.....	.....
Total	180	165.43	1,346	3.67	3.37	7.47	167	153.48	8	7.35	.....	.....	2	1.83	3
Grand aggregate	963	885.11	7,837	21.41	19.67	8.13	872	801.45	72	66.17	1	.91	3	2.75	15

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease, on each ship on the Asiatic Station.*

Diseases and injuries.	Richmond.				Swatara.				Monocacy.				Ashuelot.				Palos.				Alert.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES.																												
1.—*Zymotic diseases.*																												
Erysipelas					1	1											1								1			
Febricula					3																				4			
Febris continua simplex	1								1												5				7			
Febris enterica	1				1	1																			2			
Febris intermittens	12				12	1			9				11				4				5				53			
Febris remittens	1				3				2								1	1			2				9			
Roseola	2																								2			
Varicella									1	1															1			
Varioloides	2	2																							2	2		
Total	19	2			20	3			13	1			11				6	1			12				81	7		
Ratio per M	17.46	1.83			18.38	2.75			11.94	.91			10.11				5.51	.91			11.02				74.44	6.43		
Number of sick-days	90				116				40				54				12				56				368			
Average number sick daily	.24				.31				.10				.15				.03				.15				1.00			
Average number sick daily per M	.22				.28				.09				.13				.02				.13				.91			
Average duration of treatment	2.73				5.80				3.07				4.90				2				4.66				4.54			
2.—*Constitutional diseases.*																												
Adynamia									2	1			2				2				1				7	1		
Lumbago																					2				2			
Podagra	1																								1			
Rheumatismus acutus	2	1			26	4															2				30	5		
Rheumatismus chronicus	2				5				4				3								3	1			17	1		

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease, on each ship, &c.*—Continued.

Diseases and injuries.	Richmond.				Swatara.				Monocacy.				Ashuelot.				Palos.				Alert.				Total.			
	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.
		To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.	
GENERAL DISEASES—Continued.																												
2.—*Constitutional diseases*—Continued.																												
Sciatica	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	1	.....	.....	3	1	.....	.....
Syphilis primitiva	3	.....	.....	.....	.....	.....	.....	.....	10	.....	.....	.....	3	.....	.....	.....	1	.....	.....	.....	4	1	.....	.....	21	1	.....	.....
Syphilis consecutiva	12	1	.....	.....	2	.....	.....	.....	4	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	3	2	.....	.....	26	3	.....	.....
Torticollis	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Tuberculosis	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1
Total	21	2	.....	.....	34	4	.....	1	20	1	.....	.....	11	.....	.....	.....	5	.....	.....	.....	17	5	.....	.....	108	12	.....	1
Ratio per M	19.30	1.83	.....	.....	31.25	3.67	.....	.91	18.38	.91	.....	.....	10.11	.....	.....	.....	4.59	.....	.....	.....	15.62	4.59	.....	.....	99.26	11.02	.....	.91
Number of sick-days	407	.....	.....	.....	325	.....	.....	.....	362	.....	.....	.....	103	.....	.....	.....	42	.....	.....	.....	196	.....	.....	.....	1,495	.....	.....	.....
Average number sick daily	1.11	.....	.....	.....	.88	.....	.....	.....	.98	.....	.....	.....	.44	.....	.....	.....	.11	.....	.....	.....	.53	.....	.....	.....	4.08	.....	.....	.....
Average number sick daily per M	1.02	.....	.....	.....	.80	.....	.....	.....	.89	.....	.....	.....	.40	.....	.....	.....	.09	.....	.....	.....	.48	.....	.....	.....	3.75	.....	.....	.....
Average duration of treatment	19.37	.....	.....	.....	9.55	.....	.....	.....	18.10	.....	.....	.....	14.81	.....	.....	.....	8.4	.....	.....	.....	11.52	.....	.....	.....	13.24	.....	.....	.....
LOCAL DISEASES.																												
1.—*Diseases of the nervous system.*																												
Cephalalgia	3	.....	.....	.....	12	1	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17	1	.....	.....
Congestio cerebri	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....
Epilepsia	2	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	1	.....	.....
Lobatio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	2	.....	.....	.....	3	.....	.....	.....
Myalgia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....
Nausea marina	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....

Neuralgia	1				2				1								1				4				9					
Neurasthenia																					1	1			1	1				
Paralysis									1																1					
Vertigo																					1				1					
Total	7	1			16	2			5								2				9	1			39	4				
Ratio per M	6.43	.91			14.70	1.83			4.59								1.83				8.27	.91			35.84	3.67				
Number of sick-days	41				228				17								12				48				346					
Average number sick daily	.11				.62				.04								.03				.13				.94					
Average number sick daily per M	.10				1.56				.03								.02				.11				.86					
Average duration of treatment	5.85				14.25				3.4								6				5.33				8.87					
2.—Diseases of the eye.																														
Conjunctivitis	10	2			2	1							1	1			2				3				18	4				
Ophthalmia	1	1																							1	1				
Total	11	3			2	1							1	1			2				3				19	5				
Ratio per M	10.11	2.75			1.83	.91							.91	.91			1.83				2.75				17.46	4.59				
Number of sick-days	175				3								7				8				48				241					
Average number sick daily	.47												.01				.02				.13				.65					
Average number sick daily per M	.43																.01				.11				.59					
Average duration of treatment	15.90				1.5								7				4				16				12.68					
3.—Diseases of the ear.																														
Otalgia	2																								2					
Surditas					1	1																			1	1				
Total	2				1	1																			3	1				
Ratio per M	1.83				.91	.91																			2.75	.91				
Number of sick-days	7				2																				9					
Average number sick daily	.01																								.02					
Average number sick daily per M																									.01					
Average duration of treatment	3.5				2																				3					

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease, on each ship, &c.*—Continued.

Diseases and injuries.	Richmond.				Swatara.				Monocacy.				Ashuelot.				Palos.				Alert.				Total.			
	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.
		To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.	
LOCAL DISEASES—Continued.																												
4.—*Diseases of the teeth.*																												
Odontalgia	1				3								1												5			
Total	1				3								1												5			
Ratio per M	.91				2.75								.91												4.59			
Number of sick-days	2				7								6												15			
Average number sick daily					.01								.01												.04			
Average number sick daily per M																									.03			
Average duration of treatment	2				2.5								6												3			
5.—*Diseases of the circulatory system.*																												
Hypertrophia cordis									1	1															1	1		
Palpitatio	3	2			5				1												1	1			10	3		
Pericarditis					1	1																			1	1		
Syncope					4																1				5			
Varix																					1	1			1	1		
Total	3	2			10	1			2	1											3	2			18	6		
Ratio per M	2.75	1.83			9.19	.91			1.83	.91											2.75	1.83			16.53	5.51		
Number of sick-days	37				59				19												12				127			

Average number sick daily	10				.16				.05												.03				.24										
Average number sick daily per M	.09				.14				.04												.02				.31										
Average duration of treatment	12.33				5.9				9.5												4				7.05										
6.—*Diseases of the respiratory system.*																																			
Asphyxia																	1								1										
Bronchitis acuta	8				9				2		1		4				2				2	1			27	1	1								
Bronchitis chronica					2	1			1				2								1	1			6	2									
Catarrhus	7				2				1								2				5				17										
Laryngitis					1																				1										
Phthisis pneumonica chronica	1	1							1	1			1	1							1	1			4	4									
Pleuritis									1																1										
Total	16	1			14	1			6	1	1		7	1			5				9	3			57	7	1								
Ratio per M	14.70	.91			12.86	.91			5.51	.91	.91		6.43	.91			4.59				8.27	2.75			52.38	6.43	.91								
Number of sick-days	64				58				39				101				10				40				312										
Average number sick daily	.17				.15				.10				.27				.02				.10				.85										
Average number sick daily per M	.15				.13				.09				.24				.01				.09				.78										
Average duration of treatment	4				4.14				6.5				14.42				2				4.44				5.47										
7.—*Diseases of the digestive system.*																																			
Cholera morbus	5				31				1				1				1				5				44										
Colica	1				3				3				2				1				4				14										
Colica pictonum	1																								1										
Constipatio	1				3																				4										
Diarrhœa acuta	11				28				10	1			7				4				6	1			66	2									
Diarrhœa chronica																					1	1			1	1									
Dysenteria chronica					2																				2										
Dysenteria acuta	14				12				1	1			1												28	1									
Dyspepsia	1				5																				6										
Dyspepsia	1																								1										
Enuresis									1																1										
Fauces ulcerosa					3																				3										
Gastritis	1				1				1				2								1				6										
Hæmorrhoïs					1	3															2				3	1									
Hepatitis acuta	4	1			3	1			1																8	2									
Hernia	1																1				1	1			3	1									
Icterus	1				1																1				3										
Pharyngitis													1												1										
Stomatitus																																			

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease, on each ship, &c.*—Continued.

Diseases and injuries.	Richmond.				Swatara.				Monocacy.				Ashuelot.				Palos.				Alert.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																												
7.—*Diseases of the digestive system*—Continued.																												
Tonsillitis	7				8				3	1			1				2				2				23	1		
Vermes	2								1												1				4			
Total	51	1			101	2			22	3			15				9				24	3			222	0		
Ratio per M	46.87	.91			92.63	1.83			20.22	2.75			13.78				8.27				22.05	2.75			204.04	8.27		
Number of sick days	270				419				122				153				27				83				1,074			
Average number sick daily	.73				1.14				.22				.41				.07				.22				2.93			
Average number sick daily per M	.67				1.04				.20				.37				.06				.21				2.69			
Average duration of treatment	5.29				4.14				5.54				10.2				3				3.45				4.83			
8.—*Diseases of the genito-urinary system.*																												
Chancroides	6				3	1																			9	1		
Cystitis	2				1								1												4			
Epididymitis					5																				5			
Gonorrhœa	3	1			5				2												1				11	1		
Hydrocele									1																1			
Nephritis	1																								1			
Nephritis	1																								1			
Orchitis	11				2				6				3								7				31			
Phymosis	1								2																3			

| | | |

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease, on each ship, &c.*—Continued.

Diseases or injuries.	Richmond.				Swatara.				Monocacy.				Ashuelot.				Palos.				Alert.				Total.			
	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.
		To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.	
LOCAL DISEASES—Continued.																												
10.—*Diseases of the integumentary system.*—Continued.																												
Ulcus	2				5				3				1												11			
Urticaria	2																								2			
Total	29				43	1			15	1			10				2				3				102	2		
Ratio per M	26.65				39.52	.91			13.78	.91			9.19				1.83				2.75				93.75	1.83		
Number of sick-days	1.70				2.90				69				97				13				22				661			
Average number sick daily	.46				.79				.18				.23				.03				.06				1.80			
Average number sick daily per M	.42				.72				.16				021				.02				.05				1.65			
Average duration of treatment	5.86				6.74				46				9.7				6.5				7.33				6.48			
11.—*Diseases of the absorbent system.*																												
Adenitis	8				3				4				2				2				1	1			20	1		
Total	8				3				4				2				2				1	1			20	1		
Ratio per M	7.35				2.75				3.67				1.83				1.83				.91	.91			18.38	.91		
Number of sick-days	200				59				118				47				33				21				478			
Average number sick daily	.54				.16				.32				.12				.09				.05				1.33			

Average number sick daily per M	.49				.14				.29				11				.08				.94				1.22										
Average duration of treatment	25				19.66				29.5				23.5				46.5				21				23.9										
12.—*Non-malignant tumors and cysts.*																																			
Adenoma					3																				3										
Lipoma													1												1										
Total					3								1												4										
Ratio per M					2.75												.91								3.67										
Number of sick-days					44								4												48										
Average number sick daily					.12								.01												.13										
Average number sick daily per M					.11																				.11										
Average duration of treatment					14.66								4												12										
Poisons.																																			
Alcoholismus	1								6				10	1											17	1									
Delirium tremens									1																1										
Ebriositas									1				2												3										
Vulnus venenatum									1												1				2										
Total	1								9				12	1							1				23	1									
Ratio per M	.91								8.27				11.02	.91							.91				21.14	.91									
Number of sick-days	2								26				79								15				122										
Average number sick daily	0								.07				21								.04				.33										
Average number sick daily per M	0								.06				.39								.07				.30										
Average duration of treatment	2								3.88				6.58								15				5.30										
Violent diseases and deaths.																																			
Abrasio	1				1												1								3										
Ambustio	1				4								1								1				7										
Contusio	10	1			21				9				6								11	1			57	2									
Fractura	1				1	1			1												2	2			5	3									
Luxatio	1				3				1								1								6										
Strumma	8				18				2								1				1				30										
Submersio					1			1	1			1													2										2
Vulnus contusum	14				10				2								2				5				33										
Vulnus incisum	7				9																1				17										

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease, on each ship, &c.*—Continued.

Diseases or injuries.	Richmond.				Swatara.				Monocacy.				Ashuelot.				Palos.				Alert.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																												
Violent diseases and deaths—Continued.																												
Vulnus laceratum	2	....	....	....	8	1	....	....	1	....	....	....	2	1	....	....	.....	....	....	....	4	1	....	....	17	3	....	....
Vulnus punctum	....	....	....	....	2	....	....	....	....	....	....	....	1	....	....	....	.....	....	....	....	....	....	....	....	3	....	....	....
Total	45	1	....	....	78	2	....	1	17	....	....	1	10	1	....	....	5	....	....	....	25	4	....	....	180	8	....	2
Ratio per M	41.36	91	....	....	71.69	1.83	....	.91	15.62	....	....	.91	9.10	.91	....	....	4.59	....	....	....	22.97	3.67	..	....	165.44	7.35	....	1.83
Number of sick-days	329	....	....	....	498	....	....	....	166	....	....	....	57	....	....	....	67	....	....	....	229	....	....	....	1,346	....	....	....
Average number sick daily	.89	....	..	....	1.36	....	....	....	.45	....	....	....	.15	....	....	....	.18	....	....	..	.62	....	....	....	3.67	....	....	....
Average number sick daily per M	.81	....	....	....	1.25	....	....	....	.41	....	....	....	.13	....	....	....	.16	....	....	....	.56	....	....	....	3.37	....	....	....
Average duration of treatment	7.31	....	....	....	6.38	....	....	....	9.76	..	....	....	5.7	....	....	....	13.4	..	....	....	9.16	....	....	....	7.47	....	....	....
Grand aggregate	241	15	....	....	347	21	....	2	128	8	1	1	86	5	....	....	40	1	....	....	121	22	....	....	963	72	1	3
Ratio per M	221.50	12.96	....	....	318.93	19.30	....	1.83	117.64	7.35	.91	.91	79.04	4.59	....	..	36.76	.91	....	....	111.21	20.22	....	....	885.11	66.17	.91	2.75
Number of sick-days	2,373	....	....	....	2,324	....	....	..	1,213	....	....	....	789	....	....	....	245	....	....	....	993	....	....	....	7,837	....	....	....
Average number sick daily	6.21	....	....	....	6.34	....	....	....	3.31	....	....	..	2.15	..	....	....	.66	..	....	....	2.71	....	....	....	21.41	....	....	....
Average number sick daily per M	5.70	....	....	....	5.81	....	....	..	3.04	....	....	....	1.97	....	....	....	.60	..	....	....	2.49	....	....	....	19.67	..	....	..
Average duration of treatment	9.43	....	....	..	6.69	....	....	....	9.47	....	....	....	9.17	..	....	..	6.12	....	....	....	8.20	....	....	....	8.13	....	....	....

NAVAL HYGIENE.

SWATARA.

This vessel lay at the navy-yard, Boston, Mass., the first 20 days of the first quarter, preparing for sea, having been commissioned December 24, 1879, for service in the Asiatic fleet. On the 21st of January, 1880, she sailed from Boston, stopping on the route 4 days at Gibraltar, 3 at Malaga, 3 at Velatta, 3 at Port Said, 5 at Ismalia, 1 at Suez, and was 52 days at sea during this quarter. In the second quarter, 38 days were occupied at various points along the route, and 53 at sea, arriving at Hong-Kong June 17, five months from the United States. On the voyage out two deaths occurred in the ship's company; one from consumption and one from drowning. In the third quarter, 70 days were spent in various points along the coast of China and Japan, including 34 at Yokohama, and 22 at sea. All the fourth quarter was occupied in harbor at Yokohama, Japan. During the year, this ship was in port 239 days and 127 days at sea.

Surgeon H. Stewart reports that—

Since the last report from this ship by Surgeon E. Kershner, an improvement has been effected in the arrangement of the steerage. Six bunks have been provided on each side instead of the hammocks as before. Ventilation has been vastly increased by the removal of the transverse bulkhead; so that the steerage country, instead of being shut in, is now continuous with the open berth-deck. Besides this, the ward-room bulkhead has been moved aft nearly six feet to its proper place, liberating on each side a door which had been closed by the wedging of the wardroom into the steerage country. Although the wardroom is thus confined within limits which are smaller by over 500 cubic feet than formerly, its loss of space is probably more than compensated by the removal of the old steerage bulkhead and the increased circulation of air resulting therefrom. This is particularly noticeable when the ship is under steam, and strong currents flow from the after part of the ship to the fire-room.

An important hygienic improvement has also been made in regard to the nuisance of ventilating the bilges into the wardroom and berth-deck, but the officers of the ship themselves are to be credited with this. A few days after leaving Boston for Gibraltar a very strong odor of bilge rapidly developed, the foul air in the wardroom proving more than disagreeable, since it began to tell on the health. Malaise, headache, nausea, and, in two cases, vertigo, were complained of by members of the mess on rising in the morning. Examination of the rooms where the air was most contaminated showed long holes, 16 inches by 3, which were situated over the knees and communicated with the spaces between the skins of the ship. A search while the ship was lying at the navy-yard had failed to reveal them, because they had been sufficiently closed to escape detection, but not to stand the laboring of the ship in a seaway. The thin pieces of board with which the work had been done had loosened and many had already fallen out, leaving the orifices open to the passage of gusts of bilgy air, which at every roll of the ship were violently injected into the state-rooms. This matter was reported to the commanding officer, and the vents were closed. An esape for the foul air was cut in the inner-planking of the ship, on the quarter-deck beneath the hammock rail. Subsequently, with the exception of the space occupied by the coal-bunkers, the entire berth-deck as far forward as the foremast was found full of similar holes, which were closed in the same manner. Comment is unnecessary on the indifference which, at this late age, continues to send ships to sea in this condition.

Ventilation.—In the Swatara, as in nearly all our other cruisers, light and ventilation are deficient in the quarters of the wardroom, steerage, and warrant officers; while further forward, on the same deck, in the portion allotted to the crew, cubic air-space, light, and ventilation are at once reduced to a minimum. In port, 134 men sleep here, in a space of about 101 cubic feet per head. Although doubled at sea, when one-half the crew at a time is on deck, it is still scarcely more than a tenth of the amount demanded by laws of hygiene. Sufficient cubic air-space, therefore, in view of the numbers such a ship as the Swatara is obliged to carry, is completely out of the question. A great increase in the facilities for ventilation is the only compensation that can be afforded. At present the portion of berth-deck last mentioned, not counting the sick-bay, is provided with sixteen small air-ports,

7¾ inches in diameter, and two hatches (excluding those for the fire and engine rooms), whose combined area is about 56 square feet. The atmospheric circulation is aided in warm weather by wind-sails; and in cold weather, or while the ship is under steam, by the ascent of heated columns of air from the interior of the ship. Still, the air is always very impure when the men are in their hammocks; and at sea its impurity is always liable to be frightfully exaggerated; for, if at all rough, the air-ports are closed; if, in addition, the weather be rainy, the hatches are also nearly hermetically sealed, the hatch-covers being so constructed as not to be able to shed the water without shutting out the air at the same time. The air below, which to be kept pure ought to be changed once in about four minutes, becomes nearly stagnant, and is heavily laden with fetid organic material from the lungs and skins of the men. Under such conditions the poisonous atmosphere, one of the most pernicious agents that operate against the sailor's health and vigor, can be efficiently removed only by some such ventilating apparatus as that which has successfully been tried on board the Richmond. In port, no doubt great benefit would result merely from having the large air-ports which are now being introduced into some of our ships.

Lighting.—Large air-ports would also give the berth-deck a brighter and more cheerful aspect. At present it is dark and dismal, and is rendered more so by its funereal lining of long, black ditty-bags. These latter are an eyesore, and are always carefully concealed with a clean, white strip of canvas during Sunday inspection. The amount of light absorbed by these bags can be appreciated by those present when the canvas is removed after inspection; it is as though a cloud had passed over the sun. They should be replaced by neat lockers, or, at least, their color changed to white.

Sick-bay.—The sick-bay is forward, in its usual place in the noisiest part of the ship, and should be moved aft. It is ventilated by a small hatch (3 feet 8 inches by 2 feet), which descends from the topgallant forecastle into the yeoman's storeroom. It has two small air-ports which, on account of the inclination of the ship's sides, are placed obliquely, throwing most of the light against the deck overhead. The sick are thereby largely deprived of its stimulus; while the diagonsis of disease and the examination of recruits are rendered considerably more difficult. The water-closet is a great convenience. Its connection with the tank, however, has never worked well, the valve being nearly always out of order; and flushing has consequently to be done with a bucket of water.

The brig.—The brig is situated on the berth-deck. It is built inboard about the foremast, and has about 120 cubic feet of air-space. It is air-tight, except for a number of minute perforations in the door. When closed it is simply a large "sweat-box," in which no man could be long confined without running the risk of seriously impairing his health. It should be placed against the ship's side, where it might have a port to communicate with the outer air.

The bilges.—The bilges are accessible in every part. They are pumped dry every evening. The after bilge is whitewashed once a week, and the forward one once in two weeks. They are kept in good condition.

Water.—Maximum distilling capacity 2,100 gallons. The two central boilers are used. The tanks, four in number, hold 6,990 gallons. They are kept very clean, simply by washing. Iron rust is very seldom, and then but slightly, noticeable. The water is usually rather insipid; the only air it gets being that of the hold, which it slowly absorbs after running into the tanks. Our experience would seem to indicate that in a hygienic point of view the safest course on this station is for ships to depend on their condensers for water for all purposes. At Hong-Kong some apparently good water was brought on board with the intention of using it for washing, but through mistake it was served out for drinking. Shortly afterwards eight cases of diarrhea appeared on the list; and about thirty, ill in a less degree with the same complaint, applied for treatment at the sick-bay. This outbreak appeared to be directly traceable to the Hong-Kong water, and ceased when the mistake was rectified. In a merely economical aspect, the gain which resulted in this instance from purchasing the water from shore was more than canceled by the loss of the services of those who were thereby sent on the list.

Clothing.—In this respect the crew were well provided, each man having two suits of blue and two of white. Those liable to be exposed to wet weather have oilskins. The wearing of the "cummerbund," which protects the abdomen from sudden chilling, was made compulsory while in the tropics and on the China coast in hot weather.

Food.—So far as quality and quantity are concerned, the Navy ration is very satisfactory; but the manner of serving it on a black mess-cloth laid flat on the deck where the men sit, crouch, or lie down to their food, as best suits their peculiar build, is behind the age, to say the least. There is no good reason, barring the majesty of custom, why the men's comfort should not be considered of sufficient importance to supply them with swinging tables and with convenient seats. And here, although perhaps a little out of place, I may as well draw attention to that other relic of barbarism, the men's water-closet. A man suddenly roused at night to attend to a call

of nature, and liable in his hurry to be scantily clad, has no alternative, unless he happens to be on the sick-list, but to rush up to the head, without cover, although perhaps exposed to the most violent snow-storm or the bitterest gale at sea, while the spray is coating the ship with ice. Invaliding, death, and pensions result from this. The head should be housed over, or else, which is more sightly, removed to beneath the forecastle, as I have seen in the British service. A change of this kind is demanded on no mere humanitarian plea. The interest of the government is concerned, for it may be considered an axiom that the more the comfort of the men is fostered, the better will be the class of men who enter and remain in the service.

ASHUELOT.

During the entire first quarter this vessel lay in port at Shanghai, China. In the second quarter, 77 days were occupied in ports in Japan and China, and 14 at sea. In the third quarter, 77 days were spent in ports on the same coast and 15 at sea. In the fourth quarter, 86 days were spent at Chefoo, Shanghai, and Tien-Tsin, China and 6 at sea. During the year the Ashuelot was 331 days in port and 35 at sea.

The following remarks are made by Passed Assistant Surgeon A. M. Owen:

During the year the ship has been completely dismantled and extensively repaired. Practically there were no alterations made in the vessel save that iron beams were substituted for wooden. A number of improvements which were suggested were not approved, so that she was rebuilt with almost no changes save the beams mentioned.

The ship is a side-wheel steamer of 786 tons measurement, known as a "double-ender," being sharp at either end. She was built at Boston, Mass., in 1866; came to this station soon after, and has remained since constantly in commission, having been repaired more or less extensively at various times. She carries 6 guns and a saluting battery of 4 howitzers, and has now a complement of 13 commissioned and 3 steerage officers, 98 men, and 18 marines, making a total of 132 all told. There are ample accommodations for all hands under all circumstances. In warm weather a majority of the officers sleep upon the hurricane deck, on bamboo beds covered with mosquito netting, an admirable arrangement, and many of the men swing under this deck. The wardroom contains 9 state-rooms, of which number 5 are on the starboard side; the after one on the port side is used as the cabin pantry. All are well fitted and unusually large. The executive officer occupies the starboard steerage, the port being taken by the four junior officers. There are two sky-lights, one forward, the second aft, which admit usually sufficient light and air. The entrance to the wardroom is through a hatch opening into the steerage country. The berth-deck is large, airy, and comfortable. The hatches are suitably placed and of good size. The dispensary and medical store-room are large, convenient, and well fitted, the former being situated on the berth-deck, against the bulkhead of the fire-room; the latter is under the wardroom, aft. The cabin, wardroom, steerages, and berth-deck are heated by steam, the pipes running through the rooms just within the combing-sills and around the sides of the berth-deck—an excellent arrangement. The heads, two for the men, and officers' water-closets are upon the guards and are heated also by steam-pipes, which drain into the water-tanks. Thus the water condensed is used for their cleansing. The temperature for days has been as low as 9° Fahr., with a northwest wind blowing, but the ship has been comfortable.

All the water used for drinking, cooking, and bathing is condensed, and is of the best quality, and unlimited in quantity, leaving nothing to be desired in this respect.

The crew is an unusually indifferent one. I think I express the general conviction of the officers in stating it to be the worst set of men, as a whole, with which they have been connected. There are 32 nationalities now represented. With the exception of the marines, most of these men have been shipped on the station, and are the best obtainable under such circumstances. It is difficult to get a full complement, even for this vessel; and until recently Chinamen had to be employed as coalheavers, making the number of that nation on board 40, nearly one-half of the crew proper. These Chinese wear their characteristic dress, including the pig-tail, and few of them understand the language sufficiently well to go through the drills in an intelligent manner.

Since the recommissioning of the Ashuelot there have been two men gravely ill; one from acute dysentery, the second with pleurisy, both following debauches.

Venereal disease has been frequent among the crew, but, so far, we have had little trouble in its management.

PALOS.

In the first quarter this vessel lay at Tien-Tsin, Chefoo, and Shanghai 88 days, and was at sea 3 days. The second quarter was occupied entirely in port at Shanghai. In the third quarter, 86 days were spent at Shanghai, Kobe, and Nagasaki, and 6 at sea. In the fourth quarter, 83 days were spent at Kobe, Nagasaki, and Shanghai, and 9 at sea.

During the year the Palos was 348 days in port and 18 at sea.

Passed Assistant Surgeon C. G. Herndon makes these remarks:

The average number of souls on board during the past year has been 51. Of these 9 are officers, and of the remainder 9 are Chinamen. No disease of an epidemic character has been encountered. The health of officers and men during the year has been good.

During the past summer the light spar-deck has been extended forward, and has added immensely to the comfort of the men. The increase in berthing capacity thus obtainable has been given in a previous report. The berth-deck is not now used for berthing purposes, except to a very limited extent, and really need not be used at all for this purpose.

RICHMOND.

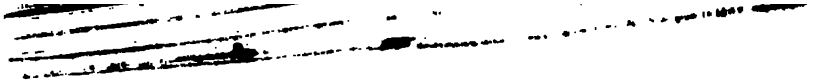
During the first quarter this vessel lay 77 days at Hong-Kong, 4 at Amoy, 3 at Shanghai, and was 7 days at sea. In the second quarter, 65 days were spent at Shanghai, 21 at Kobe and Nagasaki, and 5 at sea. In the third quarter, 60 days were spent at Yokohama, 2 at Kobe, 3 at Cheefoo, and 17 at sea. In the fourth quarter, she was 45 days at Yokohama, Nagasaki, and Kobe, 40 at Shanghai, and 7 at sea. During the year the Richmond was 330 days in port and 36 at sea.

MONOCACY.

During the first quarter, this vessel lay 64 days at Shanghai, 22 days at other Chinese ports, and was at sea 5 days. In the second quarter, 86 days were spent at Shanghai and Chefoo, and 5 at sea. In the third quarter, 86 days were spent in Shanghai and Chefoo, and 6 at sea. The fourth quarter was spent entirely in port at Shanghai. During the year the Monocacy was in port 350 days and 16 at sea.

ALERT.

This vessel lay at Yokohama, Japan, 88 days of the first quarter, and was at sea 3 days. During the second, third, and fourth quarters she was employed in surveying shoals and islands south of Japan. During the year the Alert was 305 days in port and 61 at sea.



MEDICAL TOPOGRAPHY AND SANITARY REPORTS.

REPORT OF PASSED ASSISTANT SURGEON A. M. OWEN,

U. S. S. ASHUELOT.

The hospital in Tien-Tsin has been built entirely by subscriptions of the Chinese officials, and can be made to accommodate some 40 beds. This building was formally opened December 2, 1880, by the viceroy in person, assisted by the various officials, Chinese and foreign. The viceroy now allows $7,500 annually for medicines and general expenses, which amount he will, it is probable, increase in time. In the old city of Tien-Tsin there is a dispensary in one of the principal temples, where out-patients are seen four times weekly.

From 200 to 250 are treated on each of these days, a record being kept of every case. Minor surgery is done on the spot, but those who require hospital treatment are sent to the institution of the mission, if they can afford to feed themselves, as, unfortunately, there are no funds with which to provide food or bedding to these patients. Ophthalmic surgery is by far the most common. From 20 to 50 cases of disease of the eyes apply weekly for aid.

The average of 5 operations for entropion per month is made. The results are markedly good, even in cases where there has been continued conjunctival inflammation for long periods. Some 50 operations for hare-lip have been performed during the past few months, and every one of them has made an excellent result.

The Chinese stand surgical interference wonderfully well, and submit to painful operations in a manner astonishing to witness, thus resembling our Indians. Only in the major cases is an anæsthetic administered. Once consent is obtained, confidence is absolute, and they are passive in the hands of the surgeon.

Among the instruments noticed is to be mentioned the thermocautery of Pacquelin. For the removal of vascular tumors, hæmorrhoids, or performing other operations in which there is likely to be excessive hemorrhage, this is continually used, and with great confidence and success. All cases of dysentery, acute, subacute, and chronic, are treated by routine, with ipecacuanha, and with marvelous results. Syphilis is exceedingly prevalent in its several stages and forms, and, in general, is readily managed. At present it is rare for patients with diseases of any kind in the acute stage to ask for treatment; almost invariably they come to the foreigner, as a matter of last resort, and thus the exceeding difficulty of aiding many of them. During the past autumn excision of the ribs has been frequent, as disease of these bones appears to follow the famine fever in many instances. The Chinese, as a rule, object to surgical treatment in cold weather, owing, no doubt, in great measure, to the fact that they have to furnish their own bedding and pay for warming the bed occupied.

It was judged best, in building the hospital in question, to follow the native architecture as nearly as practicable, to allay all prejudice possible, and thus the beds are constructed of bricks, with a fire-place beneath in which straw, hay, and brush are burned for heating. Thus

SANITARY CONDITION

OF

VESSELS ON SPECIAL SERVICE.

TABLE I.—*Showing the force on each ship, the number admitted and discharged, number of days under treatment, and average per M of force on special duty.*

Vessel.	Strength.	Strength corrected for time.	Admitted.						Discharged.					Continued.	Number sick-days.	Average number of days under treatment.	Daily average number sick.		Number admitted per M of strength.
			From last year.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.	Cured.	To the hospital.	Invalided. From the service.	Died.	Total.				Absolute.	Per M strength.	
Ticonderoga	205	205	11	91	95	87	63	347	318	21	3	.....	342	5	5,606	16.86	15.40	75.41	1,692.68

TABLE I.—*Showing the force on each ship, the number admitted and discharged, number of days under treatment, and average per M of force on special duty.*

Vessel.	Strength.	Strength corrected for time.	Admitted.					Discharged.				Daily average number sick.		Number admitted per M of strength.
			From last year.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.	Cured.	Invalided.	Died.	Total.	Absolute.	Per M strength.	
										To the hospital.	From the service.				
Ticonderoga	205	205	11	91	95	87	63	347	318	21	3	342	15.46	75.41	1,662.68
Continued.															
Number sick-days.															
5,666															
Average number of days under treatment.															
16.40															

TABLE II.—*Showing the number of cases, the discharged, the invalided and dead, for each disease, and their ratio per 1,000 of the force on the United States steamer Ticonderoga, on special service.*

Diseases and injuries.	Cases.		Number of sick-days	Average number of men sick daily.		Average number of days under treatment.	Discharged to duty.		Invalided.				Died.		Continued.
	Number.	Per 1,000 of force.		Absolute.	Ratio per 1,000 of force.		Number.	Per 1,000 of force.	To hospital.		From service.		Number.	Per 1,000 of force.	
									Cases.	Per 1,000 of force.	Cases.	Per 1,000 of force.			
GENERAL DISEASES.															
1.—Zymotic diseases.															
Febris intermittens	32	156.09	263	.71	3.46	8.21	31	151.21	.....	.....	.....	.....	...	.....	...
Febris remittens	20	97.51	220	.60	2.92	11	20	97.51	.....	.....	.....	.....	...	.....	...
Vaccina	1	4.88	6	.01	.04	6	1	4.88	.....	.....	.....	.....	...	.....	...
Total	53	258.53	489	1.33	6.48	9.22	52	254.14	.....	.....	.....	.....	..	.....	1
2.—Constitutional diseases.															
Adynamia	2	9.75	24	.06	.29	12	2	9.75	.....	.....	.....	.....	...	.....	...
Rheumatismus acutus	17	82.95	278	.75	3.65	16.35	17	82.92	.....	.....	.....	.....	...	.....	...
Syphilis primitiva	19	92.68	707	1.93	9.41	37.21	18	87.80	1	4.88	.....	.....	...	.....	...
Syphilis consecutiva	11	53.65	140	.38	1.85	12.72	6	29.26	5	24.39	.....	.....	...	.....	...
Total	49	239.02	1,149	3.13	15.26	23.45	43	209.75	6	29.26	.....	.....	...	.....	...
LOCAL DISEASES.															
1.—Diseases of the nervous system.															
Cephalalgia	2	9.75	5	.10	.04	2.5	2	9.75	.....	.....	.....	.....	...	.....	...
Neuralgia	4	19.51	19	.05	.24	4.75	4	19.51	.....	.....	....	.....	...	.....	...
Pleurodynia	1	4.88	5	.01	.04	5	1	4.88	.....	.....	.....	.....	...	.....	...
Total	7	34.14	29	.07	.34	4.14	7	34.14	.....	.....	.....	.....	...	.....	...
2.—Diseases of the eye.															
Conjunctivitis	2	9.75	7	.01	.04	3.5	2	9.75	.....	.....	.....	.....	...	.....	...

POISONS.														
Alcoholismus	5	24.29	16	.04	.19	3.2	5	24.29						
Delirium tremens	1	4.88	5	.01	.01	5	1	4.88						
Total	6	29.26	21	.05	.24	3.5	6	29.26						
VIOLENT DISEASES AND DEATHS.														
Abrasio	7	34.14	80	.21	1.02	11.42	7	34.14						
Ambustio	3	14.63	83	.22	1.07	27.66	3	14.63						
Contusio	17	82.95	145	.39	1.90	8.52	17	82.95						
Fractura	3	14.63	136	.37	1.80	45.33	2	9.75	1	4.88				
Stremma	11	53.65	173	.47	2.29	15.72	11	53.65						
Vulnus contusum	7	34.14	67	.19	.93	9.57	7	34.14						
Vulnus incisum	8	39.02	65	.17	.82	8.12	8	39.04						
Vulnus laceratum	1	4.88	13	.03	.14	13	1	4.88						
Vulnus punctum	2	9.75	6	.01	.04	3	2	9.75						
Total	59	287.80	768	2.09	10.19	13.01	58	282.92	1	4.88				
Grand aggregate	347	1,092.68	5,666	15.48	75.51	16.32	318	1,551.21	21	102.39	3	14.63		5

VESSELS EMPLOYED ON ARCTIC SERVICE.

There are two ships employed on the duty of exploration of the Arctic region: the Jeannette, which sailed from San Francisco on the 8th of July, 1879, for the Polar Sea, and the Rodgers, which left the same port in June last. The mission of the latter ship was primarily to search for the Jeannette, which for many months had not been heard from; but instructions were issued to her medical officers to utilize as far as possible the opportunity for scientific research. As the surroundings in this new field of nautical operations require special care in a hygienic point of view, the bureau deemed it advisable to issue the following "sanitary instructions for the information and guidance of the Jeannette search expedition":

SANITARY SUGGESTIONS FOR THE INFORMATION AND GUIDANCE OF THE JEANNETTE SEARCH EXPEDITION.

The exacting requirements of arctic life display the cardinal importance of selecting persons of the most vigorous vital powers and of the highest moral qualities for expeditions, of whatever character, undertaken to penetrate the solitudes and to encounter the dangers of high latitudes. The physical and moral qualifications of the personnel should be scrutinized minutely, both as regards early history and present condition, with the view of determining these indispensable questions. The ages between which these qualities are found most highly developed are twenty-five and thirty-seven, or during the third and fourth decennaries of life. There should not be manifest any unusual tendency to corpulence or thinness, as both extremes suggest suspicions of defect of health. The physiological proportions of the weight to the height may be stated generally as within the limits of two and two and a half pounds to the inch of stature. Persons of moderate height, between 5 feet 6 inches and 5 feet 10 inches, have usually more endurance than those of wider ranges. It will be advisable not to select any recruit who presents evidence of any past constitutional disease, particularly scrofula, syphilis, and rheumatism, or tendency thereto, although he may be of apparently robust constitution. The temperament best suited to arctic service is that known as the sanguine; persons of this group are endowed with a more vigorous power of assimilation, active circulation, florid skin, large, firm muscles, and capacity for brisk movements and prolonged exertion. Another notable quality is a superior power of eliminating animal heat under low temperatures, so justly esteemed by Sir John Ross of first importance to sojourners in high latitudes. The heat-producing power is possessed in varying degrees by persons of the same seemingly vigorous organization. A degree of extreme cold that would be simply invigorating to one might produce in another painful or even exhausting depression. The view of Ross was that the sensations of cold are not entirely dependent upon the physical effects of greater or less hygrometric saturation, the velocity of the wind, the actual temperature, the amount of exercise, or the quality and quantity of the food. These are, it is true, circumstances which affect the power of generating animal heat, but this power is, at the same time, as much a portion of the original constitution as are the muscular or mental energies, and deserves the first attention in the selection of a crew. This fact is seen in every-day experience and is referred to by arctic travelers. Unfortunately there is no ready test to determine this desirable quality, yet it may be asserted that it is possessed by northern people, Norwegians, Danes, Swedes, Canadians, and New Englanders, in greater degree than those of the south, a circumstance due in part to inherited powers and in part to acquired adaptability, and by men of the largest appetites and most perfect digestion; as feeble stomachs, whether dyspeptic or merely unable to receive much food, are found with men who suffer most with cold, never generating heat enough to resist the impression. This doubtless explains, in a great measure, the resisting powers of the Esquimaux, whose consumption of food is sometimes enormous and often incredible. It would be advisable, as far as practicable, to recruit arctic ships from northern regions and from persons of the type and character above described, particularly from those who have already had experience in arctic traveling. The sanguine temperament finally presents the most desirable moral qualities, especially that of resistance to the depressing influences of prolonged arctic nights and daily hardships and dangers; it is linked with a humorous, lively, good-natured, and hopeful disposition, so essential to the successful and harmonious prosecution of such enterprises. The reverse of this temperament is that including persons of portly habit, sluggish movement, dark complexioned, with feeble heart power,

tardy circulation, and inclined to indulge in gloomy emotions—a class of individuals little fitted for such service.

The sanitary condition of the ship is of no less importance than the procurement of a healthy and vigorous crew; for without the former the latter will soon degenerate, and become as inefficient as a crew originally defective in health. The obtainment of appropriate sanitation is somewhat more difficult in arctic ships than under ordinary circumstances, on account of the extreme cold and the prolonged darkness, the ill effects of which are, in some manner, almost irremediable. It is unquestionable that ships intended for this service ought to be built with special reference to the peculiar and exceptional surroundings of arctic voyages, but this has not hitherto been done, and the consummation of this desirable object rests with the future. Ameliorations in the structure of ships of ordinary character may be attended with great success in attaining better conditions of sanitation.

The principal points demanding attention are the heating, lighting and ventilating contrivances. The most perfect method of heating the living deck of an arctic ship would be by steam coils fitted in appropriate adits, by means of which fresh air of the proper temperature could be delivered below. This has not yet been realized, and the old plan of warming the air after gaining admisson to the apartments prevails exclusively. This is accomplished by steam coils in the most improved vessels, such as have been built as whalers, and of this type is the Rodgers, now destined for the arctic search expedition. The usual or exclusive method of heating, up to the time of Nares' expedition, was by stoves scattered at convenient points around the deck, and communicating with the external air by pipes, a plan which leads to the production of cold draughts, deleterious at once to health and comfort.

On board the Investigator, in 1853, what is known as Sylvester's stove was used. This consisted of an ordinary heater, placed in the hold, from which pipes were led into the various apartments to be heated. This was reported as being a good heating apparatus, the consumption of coal being about 70 pounds per diem. On the Alert a number of stoves were distributed about the deck and were used as required, sometimes altogether. A plan said to answer admirably was adopted in the Discovery, of fitting a small stove with hot-water pipes, which gave out a large warming power. The maintenance of heat below will be greatly assisted by building housings over the hatches, with double doors, and covering the upper deck with snow one or two feet deep, and, when possible, in winter quarters, by banking it against the ship. The necessity for strict economy in fuel which may arise will often place embarrassing difficulties in the way of obtaining the requisite elevation of temperature for comfortable living. It may be here remarked that it is neither necessary nor desirable to raise the temperature too high. One not exceeding 55° Fah. is perfectly compatible with health and comfort, and avoids at the same time the inconvenient condensation at higher degrees. The temperature of the Alert was maintained between 40° and 50° Fah. during the winter. There is not usually more than a degree or two difference between the temperature of the air of the upper deck and that of the outside, although this deck is protected by the usual housing.

The proper illumination of arctic ships is a difficult matter; but no effort should be spared to obtain its benign influence; as Martin has truthfully observed, "light is the very life-blood of nature, without which everything material would fade and perish." The light gains access below through the skylights and bulls-eyes, which should be kept in good order. The ordinary oil-lamps and candles, as is well known, consume the oxygen of the air and at the same time diminish its respirability by eliminating carbon dioxide, and the extent of this is readily appreciable when it is stated that one pound of oil demands for complete combustion 13³ cubic feet of air, and a single sperm candle burning twenty-four hours produces 11.6 cubic feet of carbon dioxide. The electric light will furnish a boon of inestimable benefit during the period of darkness, but has not as yet been utilized for this purpose.

Ventilation of the lower deck must be carefully attended to, but, as may readily be appreciated from the excessively low temperature of the external atmosphere, the very frequent renewal of air heated in the ordinary way after admission is an impossibility; so that the methods hitherto adopted are, so to speak, a sort of compromise between cold and an impure air. When it is recollected that the volume necessary for health is 3,000 cubic feet every hour, and that the space allowed each person on a ship of 800 tons is only, at most, 150 cubic feet per man, it will be seen that, to insure the former quantity, the air would have to be changed twenty times, which would be impossible, both on account of the intense cold and the draughts that would be engendered. In our temperate latitudes, it cannot be renewed more than six times in this period without the production of damaging currents. The simplest plan, in the absence of an aspirating apparatus, is to have tubular ventilators communicating externally, and supplied with proper hoods and valves, by which the quantity of air may be regulated, as the great difference between the temperature of the outside and inside, always from 80° to 100°, will induce very strong currents. The opening and closing of the doors of the hatch-housings in the ordinary routine of ship-work will

aid in introducing fresh air. One of the officers of the Alert adopted the ingenious plan of connecting his room with the external atmosphere by means of a rubber tube, which enabled him to control the supply. Much assistance may be derived from a funnel-shaped hood inverted over the galley, which will increase the draught and conduct away the smell and moisture of the cooking. No apprehension need be felt from the bilges eliminating odorous or deleterious gases during the winter, as decomposition will be stayed by the low temperature, and in case of sickness fæcal emanations should be avoided by the use of earth closets.

A troublesome quality of the air of the living apartments of arctic ships is dampness, proceeding from several causes; from the cutaneous exhalations of the men—and the quantity of this may be appreciated when it is remembered that an ordinary-sized person eliminates from 25 to 40 ounces of moisture a day—and from the cooking operations, which, being necessarily conducted below, will supply no inconsiderable amount. These are the constant sources: and then again dampness may be engendered by neglecting to dry the clothing of working parties, or by introducing the hammocks from the low temperature of the upper deck, for the moment they are brought into the warm air of the berth-deck they speedily become wet, and hence the necessity of stowing them below whenever the thermometer falls under zero. Men returning from work should divest themselves of their clothing in the drying room set apart for the purpose, before passing to the living deck. All exposed metal surfaces should be covered with leather, or protected with a coating of cork-composition, which will effectually prevent deposits upon them. The excess of moisture dripping from the beams should be removed with cloths promptly and regularly, which will greatly contribute to both comfort and health. It may be necessary, in order to prevent wetting of the bedclothes in the bunks, to protect them from the dripping by conducting the latter away by a canvas overhang. Various special devices have been adopted by arctic explorers to eliminate the evils of condensation. Sir John Ross caused apertures to be made in the upper deck above the galley, oven, and after passages, and over these iron tanks were inverted, into which the vapor passed, became condensed, and was removed in the shape of frozen masses amounting to as much as a bushel a day. To effect the same purpose, dry chloride of lime may be used; five pounds of this, exposed on the deck, will produce a very sensible effect on the humidity of a closed apartment in three hours. It has been suggested placing metallic plates in the hatchways to act as condensers. Another important provision in preventing the deposition freezing, as well as to maintain the heat, is to line the sides of the living-deck with a non-conducting, imperishable cloth: in the Nares expedition the fabric known as the "fearnaught" was employed.

In order to increase the air space of the living deck, it has been proposed to build about the hatchways, including a space around them, snow walls with a roofing. The area thus inclosed being cut off from the outer air, free communication could be kept up with the lower deck by removing the hatch-covering.

Cleanliness, both of the ship and crew, must be maintained as an important auxiliary to health. The deck should be cleansed with hot water, and quickly dried by rubbing; and great advantage will accrue by shellacking or painting the decks thoroughly, which will prevent the absorption of moisture by the wood, and at the same time render the cleansing more speedy and effectual. An apartment should be specially set apart for the ablutions of the crew, and this is best located on the lower deck, where hot water may be attainable. Bathing should be made compulsory at least once in two weeks. The clothing of the crew should be washed at stated intervals, once in ten days or two weeks, in the room appropriated for the purpose, and under no circumstances should this work be allowed on the living-deck, to supply additional moisture. The bedding may be aired once a month. The men should be provided with a comfortable water-closet, which may be reached from the main deck when this is housed over, as is always done in winter quarters. It may be constructed of light materials, projecting from the side of the ship; and to exclude draughts and cold the snow may be built quite up to the platform, forming a sort of well. When cleansing becomes necessary, the frozen mass of fæcal deposits may be removed with the snow, and a new snow wall raised as before. In this connection it may be mentioned that during sledging expeditions the warm snow hut or tent occupied the night previous for sleeping quarters will serve in the morning for latrine purposes before resuming the march. This convenience will be fully appreciated with a temperature, perhaps, of 50° or 70° below zero.

Regulated exercise is indispensable for the maintenance of health under all circumstances. The intense cold and other incidents of arctic residence, especially during the long dark winter, are disponent to inaction, and hence the necessity to incite the crew to take a sufficient amount of body exercise to ward off disease. The ordinary routine of ship life will usually supply ample range for this purpose in the manifold labors demanded of mariners. In winter quarters, when shipboard work slackens, the men should be encouraged to employ their time in hunting or amusing themselves in pastimes that demand muscular energy. The cooks and servants par-

ticularly, who are not usually called upon for active labor, should be looked after and compelled to take open-air exercise. It may be stated, in general terms, that at least five or six hours daily should be occupied in this way, to maintain robust health under the conditions of arctic life. This sort of training, so necessary to health, may be turned to practical advantage by short journeys and the establishment of outlying depots of provisions and stores before the sledging season sets in, when the greatest drafts are made upon the physical energies. While moderate and regular exercise in labor or amusement, as indicated, conduces to health, and powerfully; aids the system in warding off scurvy, it must be borne in mind that excess in this particular is equally capable of prostrating the vital powers and inviting scurvy, hence the need of great prudence and judgment not to overtax the men in long journeys, but to give them spells of rest to recruit their strength and energy: nor is it advisable in starting from a ship to press those unaccustomed to hard work in the early days of traveling, as continuous moderate labor is less wearing than sudden and severe strains. For a healthy man a journey of nine or ten hours is not too much; equivalent to about 350 foot tons. By the adoption of this plan long distances have been accomplished by persons worn out by the depressing influences of cold and disease. Whenever the exigencies of service demand extraordinary and long-sustained exertions, as frequently occur in arctic experiences, as in breaking through the hummocks and in making roads, extra rations of tea or cocoa should be issued.

Great judgment should be exercised in graduating the weights of the sledge loads to the strength of the men and the nature of the ice to be traveled over. Under favorable circumstances 200 pounds on the short, and 240 pounds on the long sledges are proper, but no very great distance can be accomplished when the weight exceeds 220 pounds. Upon smooth roads the dogs can be depended on for material help in dragging, each animal being weighted to 100 pounds, or about one-half of a good average pull for a man. For rapid progress, as in exploration, or in the event of the necessity for quick communication between distant points, snow-shoes of the Canadian pattern will furnish the least fatiguing means: for sledge dragging they are useless.

As regular clothing, stout woolen underwear is recommended as possessing more advantages than garments made of other fabrics, although persons of experience in arctic service have used with satisfaction materials of chamois and silk for this purpose. For coat and trowsers, a fine textured, thick, and elastic material should be employed, and, when occasion demands, these should be supplemented by the warm and durable garments of fur, such as are used by the Esquimaux.

Ross says that in the way of clothing every expedient should be adopted for resisting the impressions of the extreme temperature: nothing will compensate for the want of the heat-generating energy, but external heat is but too often an imperfect expedient. "It is of little use to clothe him who will not in himself produce heat, it is like the attempt to warm a piece of ice by means of a blanket. The mistake is too common that the expedient which can only preserve heat is capable of producing it."

In sledging parties, the head can best be protected by a close-fitting woolen cap, shielding the ears, and over this the usual seal-skin covering. The feet should be enveloped by woolen stockings reaching above the knee, covered with flannel or blanket wrappers, and over these boots, or, preferably, skin moccasins of the Esquimaux, fitted with leggings. For the hands, woolen mittens with seal-skin outer covering will serve all the purposes of convenience and comfort. Much satisfaction will be derived from the use of a wide flannel roller encircling the belly. The Exquimau wears next his body a shirt made of bird skins neatly sewed together with the soft down inwards; over this a loose jumper of fox skin, which is tight round the neck when the hood is attached to it. The jumper is lined with bird skins and trimmed with fox fur. The breeches are made of bear skin reaching down to the knees and upwards so far as just to be in contact with the jumper when the person stands erect. In stooping the body is exposed between the two garments. Bird-skin socks are worn with a padding of grass and over the whole bear-skin boots. The men should be protected by water-proof tenting that will not crack or become damaged when subject to wet and freezing. The experience of the Nares expedition showed engine-room sheet insertion to be better adapted to this purpose.

The Siberian dress consists of fur socks over the ordinary ones, fur stockings outside the socks, and fur boots inclosing all. Over the ordinary dress they wear a sheepskin coat, with the wool outside, and fastening tight about the neck. Outside of this a deerskin coat reaching to the ground, with a broad collar and long sleeves.

Not less notable in arctic life is the character of the mental and moral impressions for good or for evil. Cheerfulness should be cultivated by all practical means, and intellectual tastes catered to by such diversions as are readily attainable by developing the various qualities possessed by the men composing the ship's company. Theatrical displays, orations, recitations, and musical entertainments are among the most advantageous methods that can be had recourse to for the purpose of counteracting

the tendency to mental despondency, so common during the season of arctic darkness and from which, according to Kane, the dogs themselves are not exempt.

The sanitary precautions above all others in importance to sojourners in high latitudes refer to food supplies. In consequence of the absence of wood and other fuel in the regions over which the Esquimaux roam, they have no means of creating artificial warmth other than that afforded by burning blubber in a stone lamp trimmed with a wick of moss. This heat, with that radiated from the bodies of the persons occupying the hut of snow or stones chinked with moss, sustains a temperature under which the ordinary household duties are performed without apparent inconvenience or discomfort. On the other hand, the families while traveling from point to point, and the men while out hunting on the ice, are exposed for many hours to a temperature often reaching minus 70°, and yet rarely succumb to this intense cold. This endurance and resistance to cold is in great part due to the large amount of animal food, particularly of the hydro-carbonaceous sort, consumed. The quantity is almost incredible. Captain Cochran says, in his "Journey through Siberia," that he has repeatedly seen a Yakute or a Tongousi devour forty pounds of meat in a day; that he has seen three of these gluttons consume a reindeer at one meal; nor are they nice as to the choice of parts, nothing being lost, not even the contents of the bowels, which with the aid of fat and blood, are converted into black puddings. Dr. Hayes has often seen an Esquimau hunter, when preparing for the hunt, eat from six to twelve pounds of meat, about a third of which was fat, and he places the daily consumption of the man at from twelve to fifteen pounds. The food is mostly taken raw. Dr. Rae states that during his service in the arctic regions the allowance for a man was eight pounds of fresh venison, four pounds for a woman, and two pounds for each child. Or four pounds of half-dried meat for a man, two for a woman, and one for a child. When the water afforded supplies, three large white fish were allowed a man, two to a woman, and one to a child; these fish ranged from three to four pounds each. Failure in the proper quantity and quality of these is sure to impair the strength of the men and invite disease, especially when conjoined with absence of sunlight, dampness, impure air, low temperature, defective cleanliness, want of exercise, and mental despondency. The diet should be as varied as the circumstances of the situation will admit, and should consist of a due proportion of animal and vegetable food. Rations of fresh meats should be served out from the regular supplies as often as four times a week. This may be done oftener with advantage when such food can be procured by the chase; any opportunity presenting for such extrinsic supplies should be embraced with the view of economizing the ordinary provision, and as affording materials preventive of scurvy. Such supplies are offered by the musk ox, polar bear, rabbits, ptarmigan, and the various species of water fowl and their eggs. There are persons to whom the smell and flavor of the ox are extremely distasteful, especially of the old bulls; the flesh of the cows is, in this respect, much less objectionable. The seal, walrus, porpoise, and whale, may also be depended upon as valuable sources of fresh meat which need no particular means of preservation as long as the temperature remains below the freezing point. Dr. Kane noted the fact, however, that the flesh of a deer killed by his men became nearly uneatable from putrefaction, and the liver and intestines utterly so, in 24 hours, and remarks that the rapidity of such a change ina temperature as low as minus 35° seems curious; but the Greenlanders say that extreme cold is rather a promoter than otherwise of the putrefactive process. Esquimaux are in the habit, even in the severest weather, of withdrawing the viscera immediately after death and filling the cavity with stones. Walrus meat and the skin of the narwhal enjoy a high reputation among the Esquimaux as antiscorbutics, the natives of Disco using these in connection with scurvy-grass and the angelica officinalis. Soups should never be substituted for meats, but may be appropriately used as adjuncts.

A common Russian article of diet, called Pilamania, much used in Siberian traveling, consists of meat made into balls, and covered with an envelope of dough; it is carried dry in bags. A double handful dropped into a gallon of water is boiled a few minutes and makes a substantial soup or stew.

For sledge journey, and traveling it is all-important to reduce the weight of the food supplies to the least amount compatible with the work to be done, and hence the necessity for highly concentrated preparations. To supply this desideratum the natives of the northwest dry their venison by exposing thin slices to the heat of the sun on a stage under which a small fire is kept, more for the purpose of driving away the flies by the smoke than for promoting exsiccation, and then they pound it between two stones on a bison hide. In this process the pounded meat is contaminated by a greater or smaller admixture of hair and other impurities. The meat, in drying, loses more than three-fourths of its original weight. The Hudson Bay Company prepare pemmican by drying venison or buffalo meat over a fire or in the sun, which, after pounding is mixed with an equal weight of melted or boiled fat; the whole is then packed in the skin of the animal furnishing the meat. Occasionally a fruit known as saskatum or service-berry is added. Richardson, in setting out on his boat expedition through Rupert's Land, in 1851, was supplied with a superior preparation of concentrated food

It was prepared in the following manner: A round of bullock or beef, of the best quality, having been cut into thin steaks from which the fat and membranous parts were pared away, was dried in a malt-kiln over an oak fire until its moisture was entirely dissipated and the fiber of the meat became friable. It was then ground in a malt-mill, the resultant powder was mixed with nearly an equal weight of melted suet or lard, and to render it more agreeable to the unaccustomed palate a proportion of the best Zante currants was added to part of it and part was sweetened with sugar. After the ingredients were incorporated by stirring they were transferred to tin canisters and rammed down, and the air was completely expelled and excluded by filling the canister to the brim with melted lard through a small hole left in the end, which was then covered with a piece of tin and soldered up. This process of preparing pemmican was adopted by Hall as entirely satisfactory; the article supplied the United States ship Rodgers was manufactured in a similar manner. In the last English expedition two kinds of pemmican were furnished; the plain and the sweet; the plain made of beef cut into thin slices, the fat and coarse fiber having been removed, and dried slowly for twenty-four hours on oak sawdust spread on a floor heated from below. By this process 70 per cent. of water was gotten rid of, and the dried meat was then ground to a powder and mixed with clarified suet in the following proportions: powdered meat, 4 pounds; suet, 4 pounds; cayenne pepper, one-eighth of an ounce. Sweet pemmican differs from this in containing one-half pound of sugar. Of the physiological value of pemmican as a food, De Chaumont gives the following analysis as the mean of the two kinds:

Nitrogen, 5.283 grains per cent.
Carbon, 61.112 grains per cent.
Nitrogen to carbon = 1: 11.6.

In a ration of one pound: Nitrogen, 370 grains; carbon, 4,273 grains. Potential energy of one pound: 3,338 foot tons.

Water	8.285
Albuminates	33.646
Fat	53.391
Carbo-hydrates	2.740
Salt	1.544
Total	99.606
Loss	0.394
Total	100.000

With the animal food regular rations of fresh or canned vegetables and fruits should be served. Among the best of these are potatoes, either fresh, desiccated, or preserved in molasses; cabbage, particularly in the form of sauerkraut: turnips, carrots, soused pickles, and onions. Variety may be gained by adding beets, okra, asparagus, and rhubarb. Among the fruits rank oranges, lemons, limes, preserved apples, peaches, grapes, cranberries, currants, and gooseberries.

One of the most valuable anti-scorbutic substitutes for fresh succulent vegetables is lime-juice, which should be supplied the men daily in the quantity of one ounce mixed with an equal weight of sugar. It is recommended that the issue of lime-juice begin after leaving port, when the supplies of fresh vegetables have been exhausted, and that an officer should see that each man has taken the prescribed quantity. This last suggestion is important, since, if it is left to the individual caprice or fancy, it may be neglected. Acid wines and spruce beer (the latter may be prepared on shipboard) are valuable agents in preventing scurvy.

It may be well to note the fact, in the event of loss or expenditure of the ordinary supplies of succulent vegetable food and anti-scorbutics, that, in the highest regions yet attained, there may be found plants possessing in some degree anti-scorbutic power, such as scurvy grass, sorrel, reindeer moss, and others; but neither large nor regular supplies can be obtained. The same remark also applies to the two most easily cultivable annuals, cress and mustard, as the dearth of room and the deteriorating influence of darkness impose restrictions upon their quantity and quality. They have to be put alongside of the stoves and require from sixteen to eighteen days to grow, presenting a yellow instead of the usual green color of the healthy plants. During the summer, however, when it is reasonably warm, say July, lettuce, onions, pease, and other plants may be successfully cultivated in the open air, and for this purpose light frames should be made use of.

It is very desirable that an abundance of various seeds should be furnished the Rodgers for horticultural purposes.

The Esquimaux eat the contents of the stomach of the reindeer, which are composed in part of vegetable matter, and doubtless contributes to their exemption from scurvy. Other reputed anti-scorbutic remedies, as citric, tartaric, and malic acids which

form one-twelfth part by weight of lime-juice, and the alkaline salts of these acids have been furnished the ship with the view of determining their influence should suitable opportunities offer. The indispensable necessity of lime-juice in the sledging parties, and the difficulties of carrying and preparing it for use, induced me to suggest the propriety of combining the juice and pemmican in the proportion of one ounce to the pound of the latter. A large quantity of this preparation has been furnished for use in the sledging parties, and it is believed that great advantage will accrue from it. The pemmican is greatly improved in taste and flavor, and will, I believe, be more assimilable. This is an important modification, as there are persons who cannot eat the ordinary article.

To avoid delay and labor under similar circumstances in serving out the food, I recommend that single rations of articles, particularly tea, which should be compressed, shall be prepared before the sledges leave the ship. All food, when possible, should be taken hot.

An admirable article of lime-juice, prepared by evaporation in shallow earthenware pans, at a temperature not exceeding 140°, has also been furnished for traveling parties. It presents the consistence of a semi-solid, and when dissolved possesses the properties of the juice unimpaired. Each pound represents a gallon of the solution of the ordinary strength, so that this quantity contained in a sealed tin can will supply proper rations for eight men sixteen days; a single ration, when frozen, will not exceed a walnut in bulk, and may be then carried in a canvas bag or capsule, and when needed can be melted, if there be a scarcity of fuel, by the warmth of the body in the sleeping bag. The plain juice freezes at + 25° Fah.; that fortified with 10 per cent. of spirits at + 15°. Preserved potatoes may also be transported dry in bags. Edwards' prepared potato was used in the Nares expedition, and was generally liked by the men; after slight boiling it was ready for use.

The following tables show the sledge ration of the Nares expedition and the proposed one:

British dietary.			Proposed dietary.		
Per day, per man:	*Lbs.*	*Ozs.*	Per day, per man:	*Lbs.*	*Ozs.*
Pemmican	1	0	Lime-juice } combined	1	0
Biscuit		14	Pemmican }		
Bacon*		4	Biscuit		14
Potato		2	Cheese		2
Rum (fluid ounces)		2½	Dried potato		4
Chocolate		1	Dried onions		¼
Sugar for chocolate		½	Tea		1
Tea†		½	Sugar		2
Sugar for tea		1½	Condensed milk		1
Stearine		3	Alcohol or petroleum‡	4	fl. oz.
Spirits of wine		1	Tobacco		½
Tobacco		½	Salt		¼
Salt		⅛	Pepper		1/20
Pepper		1/20	Curry powder		¼
Onion or curry powder		¼			
Total weight	2	14.9	Total weight	2	13.5

* Increased in some cases to 6 ounces, at request, in lieu of pemmican.
† Double allowance of tea was carried in lieu of rum.
‡ Four fluid ounces alcohol, of 75 per cent., will weigh about 3½ ounces avoirdupois
Average load hauled by each man on leaving ship, 234½ pounds.

It will be observed that spirits have been altogether omitted from the proposed dietary, tea having been decided by an immense majority of Arctic travelers to be more advantageous as a comforting and strengthening beverage and upon which more work can be done. The Siberian Russian drinks large quantities of hot tea while traveling, and many who are addicted to stimulating drinks while at home abstain altogether from them on the road, and drink nothing but tea.

In Kane's experience the men, after repeated trials, preferred coffee in the morning and tea in the evening, the former seeming to be more enduring in its effects and delaying hunger, while the latter was more soothing after hard work and disposing to sleep. There are important differences as to the action of the two agents according to Dr. Smith: while both are powerful respiratory excitants, increasing the elimination of the carbon dioxide, coffee causes specially an increase in the respiratory and circulatory rate, diminishes perspiration and thereby the loss of heat, and promotes the action of the bowels; tea, on the other hand, lessens the force of circulation and perspiration and cools the skin, and does not congest the mucous membranes. Hence, in certain respects, coffee and tea are physiological antidotes of each other. I have suggested the use of maté and coca in emergencies requiring excessive exertion; the extract made up into pills may be carried in the pocket.

Rum was used in the Nares expedition, and a cheering influence attributed to it, taken after the day's labor when the men had gotten into their sleeping bags. It was universally pronounced a failure in increasing the working power and endurance. Hayes says he has known most unpleasant consequences to result from the injudicious use of whisky for the purpose of temporary stimulation, and strong, able-bodied men to become utterly incapable of resisting cold in consequence of the long-continued use of alcoholic drinks. Condensed milk and egg-powder are valuable additions to the sledge dietary. Eggs, hard boiled and preserved in vinegar, will keep for months.

As regards tobacco, it has been observed that smoking tends to lessen the inclination or ability for work, but the fact of the difficulty of keeping the pipes going in open air will restrict this practice to the evening hours in camp. Chewing is regarded by some as an anti-scorbutic in a slight degree.

Supplies of potable water are most commonly obtained by melting snow; that from the old ice will be found the best. Two or three feet of the upper portion of floebergs are fresh-water ice, and below this it becomes saline, so that chemical tests should be constantly had recourse to in determining this point. Occasionally on long journeys, which can only be made inland without boats, fresh pools are encountered which will supply an abundance of sweet water. The use of snow is to be deprecated as rather tending to increase than to assuage thirst, for one gets as thirsty in very cold as in tropical weather, and the temptation is strong to eat snow. The Esquimaux, when compelled to use it, squeeze the snow in the hand and breathe through the mass thus compressed, the warmth of the hand and expired air together producing water, which may then be sucked out.

It is believed that a close adhesion to the sanitary suggestions now made will remove any fear of the occurrence of scurvy during the service of the United States steamer Rodgers in the arctic regions.

In this connection it will be proper to call attention to the common diseases and injuries liable to occur, that they may be speedily recognized and treated by those in charge of the sledging parties when unaccompanied by a medical officer, as must necessarily often happen.

Scurvy is one of the most redoubtable enemies of the arctic resident. It consists of a peculiar alteration in the properties of the blood, which becomes impoverished in nourishing materials by errors in diet, the most immeasurably frequent of which is the absence of succulent vegetable matter. The disease begins insidiously, the skin assuming a yellowish or earthy hue, is dry, rough, and unperspiring. Dark red or brownish flecks of small size and round outline break out on various parts of the body, and later the discoloration presents large purple blotches; the gums are tender, swollen, and of a dark color, bleed readily, and separate from the teeth; pains in the joints of the legs, particularly in the hams, are generally complained of, and are often being confounded with rheumatism. There are muscular weakness and feeling of lassitude, ordinary exertion producing exhaustion, palpitation of the heart, and breathlessness. The mind partakes in the general debility of the body and there is more or less disposition to despondency. In the more confirmed stages of the disease swellings occur in the hams and other parts from the bloody and fibrinous effusions, and the bones and internal organs suffer in various degrees. These are the salient points in scurvy, and every precaution should be adopted to detect its presence at the earliest moment, especially by a periodical monthly examination after the ship is settled in winter quarters. It should be remembered that paleness of the countenance is an inseparable circumstance in those who have spent a winter in the arctic regions. There is nothing like acclimatizing a European, for experience has shown that in every expedition the crews have been more sickly the second than the first year. Middendorf asserts that the high north deteriorates the constitution of the blood, and that after three winters very few can stand the fourth. It is a familiar fact that continuous low temperature impairs the appetite and interferes with sleep. It was noticed by the officers of the Alert that during the winter when the moon was up, which lasted about a week each month, more food was consumed than during the dark part of the month. This was at least in part due to the greater amount of exercise during moonlight. These facts militate against the success of the colonizing plan in arctic exploration.

It is particularly important to examine the men selected for sledging parties, to see that they are free from scorbutic taint, inasmuch as the hard work incident to this service would inevitably disqualify a person with such tendencies in a brief period, and embarrass the party with an invalid. The proper means of preventing this disease have been already fully indicated.

The most frequent trouble in the arctic region is frost-bite. The men in the sledging parties are most obnoxious to this disqualification. It approaches insidiously and should be early recognized and treated to prevent funest results. The men should be frequently asked if they perceive loss of sensation in any part of their bodies, as frost-bite may occur unawares, especially on a sudden rise of temperature. If on examining the part it presents alteration in color to a dull waxy or purplish livid hue,

with the formation of vesication or bladders, an effort should be made at once to restore the circulation slowly by frictions with the hands, or rubbing the part with melting snow, or plunging it into cold water for some time. When the circulation is established, dress with glycerine and cotton batting, and cover the whole with a bandage. Great care should be taken not to use stimulating applications at first, otherwise acute inflammation, followed perhaps by mortification, will result. Should these efforts fail of success, the frost-bitten part should be dressed with carbolized cosmoline and cotton batting, and the patient made as comfortable as possible, being placed, in case the legs and feet are affected, in a sledge. Lieut. F. Payer states that a mixture of iodine and collodion proved most efficacious against frost-bite during the arctic voyage of the Tegethoff in 1872.

In very cold weather the face-cloth should be worn, and traveling by night adopted, as far as can be done, so as to enable the men to sleep during the day, when there is less likelihood, from the higher temperature, of frost-bite. It is advised, to prevent the effects of cold upon the exposed surfaces, to rub them with unctious applications, as cosmoline. To avoid the action of the drinking vessels upon the lips, the rims should be rubbed with the gloved hand.

The glare of snow upon the eyes produces the condition known as snow-blindness, particularly in traveling during the spring and summer months. To prevent its occurrence, when the sun reappears the men should be provided with goggles of neutral-tinted glass; and on the march or in sledging parties a dark patch may be affixed to the backs of the men, upon which, when in line, the eyes may be directed instead of upon the snow. The leading man on the drag-ropes should be changed frequently to the rear, and the eye-lids may be smeared with charcoal and grease. The treatment of the disease is cold applications, astringent and sedative collyria, and the exclusion of light by bandaging the eyes.

Sometimes sledge labor causes exhaustion and fainting, and when a case of this sort occurs the person should be immediately placed upon his back, with the head low, and the clothes about the neck loosened. He should be given a little warm tea, a teaspoonful of aromatic spirits of ammonia or brandy, and allowed to rest for awhile. The occurrence of perfect unconsciousness and of complete exhaustion requires the person to be at once removed to the tents, rubbed with hot flannels, and the above-mentioned stimulants given from time to time until he recovers. He should then be dressed warmly and allowed to rest in his sleeping bag for a few hours. To meet the emergencies of accidents and diseases of a slight character, which may occur in the sledging journeys, the officers in command should be instructed by the surgeon of the vessel in the application of simple means, and furnished with suitable supplies for these purposes.

SANITARY CONDITION

OF

NAVAL STATIONS.

NAVAL STATIONS.

The movement of sick at the various naval stations for the year 1880 was materially less than for the preceding year, as indicated by the following figures:

	1879.	1880.
Number of cases admitted	2,582	2,371
Number of cases remaining from preceding year	57	28
Total number of cases treated	2,639	2,399
Total number of sick-days	22,351	17,661
Average number of days under treatment	8.47	7.36

It will thus be seen that there was a reduction in the number of admissions of 81.72 per M, and that the average duration of treatment of each case was less by nearly one day. This diminution is pretty evenly distributed among the various classes of disease, the exceptions being in the class of zymotic affections in which there was a small absolute increase, represented by fevers of malarious origin, and in the constitutional diseases, in which class an equal number of cases occurred. The most marked falling off occurred in the class of nervous diseases, the number of cases treated having been 248, against 303 during the previous year, a reduction of 181.12 per M. In the class of affections of the digestive system, the admissions fell from 607 in 1879 to 530 in 1880, a reduction of 110.37 per M. Of diseases of the respiratory organs, the reduction was from 397 to 368, or 73 per M.

The following table shows the results of vaccination at the various stations:

SHORE STATIONS.

Stations.	Presenting evidence of smallpox.		Presenting evidence of previous vaccination.		No evidence of previous vaccination.		Total.
	Successful.	Unsuccessful.	Successful.	Unsuccessful.	Successful.	Unsuccessful.	
Marine barracks, New York	0	7	31	66	0	1	105
Marine barracks, Washington	0	1	27	13	8	2	51
Navy-yard, League Island	0	0	8	29	1	4	42
Navy-yard, Washington	3	1	29	23	10	3	69
Naval Academy	0	2	6	67	0	2	77
Total	3	11	101	198	19	12	344
Per cent. of cases	4.0		87.0		9.0		.....
Per cent. of successful	21.4		33.7		61.2		35.7

NAVY-YARD, PORTSMOUTH, N. H.

At this station there were treated 62 cases, 3 less than the previous year, a ratio of 25.84 per M; of these, 9 were invalided and 1 died. The total number of sick-days amounted to 1,741, or 303 less than in 1879, the daily average number of sick being 4.75. The average length of treatment was 28.08 days; that of the previous year was 30.50 days. In the zymotic class of diseases there occurred 2 cases of erysipelas, 1 of simple continued fever, and 1 of intermittent fever. Of constitutional affections, a ratio of 5 per M, or 12 cases, was reported, being less than for the previous year. They were mostly cases of rheumatism and syphilis, and 2 were invalided from the service for the latter affection. The number of sick-days given by this class was 433, the daily average number of sick being 1.18, and the average duration of treatment 36 days. There were no cases of nervous diseases, while last year 4 were reported. Of the 3 cases of eye diseases, 2 were of conjunctivitis, and 1 was of myopia, which was invalided from the service. The principal cases of disease of the respiratory organs were 2 of acute bronchitis, and 1 each of pulmonary consumption, pleurisy, and pneumonia. The cases of disease of the digestive system were 7 in number, or 4 less than in 1879; these included 2 of hernia, which were invalided from the service. Three cases of diseases of the genito-urinary organs were reported, 5 less than last year. The largest return from this station was in the class of diseases from violence, which were 20 in number, an increase of 8 over that of 1879, and giving a ratio of 8.33 per M. One-half these cases were of contusion and sprain, and the remainder were fractures, dislocations, and wounds of various sorts. There was 1 death from contused wound, and 2 were invalided. The loss of service from this class was 727 days.

The quarters for the sick at this station remain in the same condition as described in my reports for the two past years, and I again earnestly call attention to the very great need for a more adequate building at this point.

Medical Inspector C. H. Burbank, in his report, states that—

> There have been no changes of note in a sanitary point of view since the last report. The general sewerage of the yard is bad, and especially that of the officers' quarters, hospital, and marine barracks. All should be improved and tile substituted for the present brick and especially for the wood of which the hospital sewers are made.
>
> The station is well supplied with water from cisterns filled from the roofs, from wells, and from ponds on Seavey's Island. The latter supply has been much increased by improving the ponds and laying larger pipes and extending them all the way to the large cistern. Formerly the water had to be pumped from a small receiving cistern to the large one at a considerable distance. The rain-water is principally used for drinking purposes, and I have found it, submitted to the usual tests, to be the purest of any water supplied.
>
> The building used as sick-quarters and dispensary has been described in the last report as to its situation, dimensions, air-space, lighting, heating, ventilation, &c. The only alterations made in the building since it came under my charge have been in the same wards. They were found to be in a condition wholly unfit to be occupied. The floors were loose, the ceiling cracked, and the plastering falling from the walls. The paint which had been on for many years was torn, dirty, and repulsive, and vermin swarmed in the rooms, which could be made fit to be inhabited only by complete renovation. This was recommended by myself, and a small sum (about $250) was allowed by the Bureau of Yards and Docks for the purpose. The ceilings were extensively renewed, the old floors torn up, and new ones laid, the paper was scraped from the walls and the latter thoroughly washed and carefully disinfected. The holes in the floors were stopped with plaster, and the cracks in the wood-work filled with putty. At no places were left to conceal vermin, and the walls were painted.
>
> In one of the smaller ward a water closet has been built, with a door opening into the ward but with no opening into the open air, an insufficient supply of water being obtained through a tin tube from a pump in the sink near by. A partition

tion was also put up, inclosing the water-closet and sink and sufficient space to accommodate a portable bath-tub. The door between the two wards was widened so that a bed could be moved through it. It being difficult to heat the wards with stoves on account of the loose windows and thin walls of the building, an effort has been made to introduce steam as a means of heating, with so much success as to have the main pipe led through the cellar of the hospital building into the surgeon's office, and it is desirable to extend it to the whole building.

A new hospital-building is really much needed at this station, and has already been urgently recommended by the bureau.

There have been no changes in the beddings of the quarantine station since the last report, except that they are becoming more and more dilapidated each year. They leak badly, and are wholly unfit for the purposes for which they were designed. Only slight repairs were made on the outbuildings and wharf during the year.

Medicine, medical stores, bedding and hospital furniture, as well as fuel, are kept at the station ready for immediate use in case of emergency.

The health at this station has been good, there having been very little sickness of any kind and no epidemic during the year. Even those diseases which are supposed to prevail here on account of climate have been few.

NAVY-YARD, BOSTON, MASS.

The total number of cases treated at this point during the year was 147, a reduction of 7 from that of the previous year. The ratio per M of admissions was 61.27. Of the whole number 1 died, 44 were invalided, and 5 were continued. The total number of sick days was 760, the aggregate being 22 less than in 1879; the daily average of sick was 2.07, while the average duration of treatment was 5.17 days, that of last year having been 6.41 days. The admissions in the zymotic class of diseases were 9 in number, 2 less than in 1879, and all were of intermittent fever. There were 18 cases of constitutional affections, an increase of 3 over last year, 11 of which were rheumatic and 5 syphilitic in character; 3 of this class were invalided from the service. There were 99 sick days loss, an average of 5.5 for each case. In the class of nervous affections 7 admissions occurred, of which 3 were invalided to hospital. There were 4 cases of eye diseases, 2 of diseases of the ear, and 3 of the circulatory system, the latter consisting of single cases of angina pectoris, pericarditis, and palpitation. Of affections of the respiratory organs there were 33 cases, or 5 more than in 1879, giving a ratio per M of 13.74, and a loss of 144 days; 28 of the number were of acute bronchitis; there was 1 case of pleurisy, and of the 2 cases of pneumonia 1 died; the average duration of the cases in this class was 4.36 days. Thirty cases of affections of the digestive organs were reported, a small increase over the number (27) of last year, and the ratio per M was 12.50. They included 10 cases of cholera morbus and 8 of acute diarrhœa (1 of which was invalided from the service), but there was no appearance of the acute dysentery which prevailed quite extensively last year. The total loss for this class was 116 days, or 3.86 for each case. A large increase in the number of cases of disease of the genito-urinary organs occurred, there having been 22 cases in 1880, while there were but 5 in 1879. This increase was principally due to gonorrhœa, of which there were 17 cases, out of which 11 were invalided to hospital. The ratio per M of causes of this class was 9.17 and the loss of service was 102 days, or 4.63 per case. The integumentary system gave 4 cases of abscess; and there was but 1 case of alcoholic poisoning, which compares favorably with the number (8) of last year. The violent diseases and injuries numbered only 13; 27 less than during the preceding year.

NAVY-YARD, NEW YORK.

At this station the marines do not come within the province of the medical officer of the yard, as is usually the case, but are treated by the

surgeon of the marine barracks, so that this, the largest of the navy-yards, gives the smallest return of sick. There were 16 cases reported during the year, 3 less than in 1879, 1 of intermittent fever, 4 of rheumatic affections, and the others were catarrhal and digestive troubles.

NAVY-YARD, LEAGUE ISLAND, PA.

One hundred and fifty-four cases were treated at this station during the year, an increase of 23 over the preceding one, and the ratio per M was 64.19. Of this number 27 were invalided and 2 died. The total loss of service amounted to 992 days, or 258 more than in 1879, and there was a corresponding enlargement of the daily average number of patients. This increase occurred principally in the zymotic class, and was due to fevers of malarious origin. There were in 1879 44 cases of intermittent fever, while in 1880 61 were reported, which, with 2 cases of the remittent form, make up the total of the class. The ratio per M of these cases was 26.67; the number of sick days 366, or an average of 5.71 per case. In the group of constitutional affections there was a reduction from 9 during last year to 5 in the present one, which includes 2 cases of chronic rheumatism and 3 of primary syphilis. Five of the 6 cases reported of nervous diseases were neuralgia. In the group of affections of the circulatory organs there was 1 case each of pericarditis, varix, and dilatation of the heart, and the latter terminated in death. The respiratory organs gave 16 cases, 13 of which were of bronchial affections, and there were single cases of asthma, laryngitis, and pneumonia: the latter died. The digestive group furnished 28 cases, 3 more than in 1879, and giving a ratio of 11.67 per M. The principal factors were diarrhœa 7, dysentery 4, dyspepsia 4, and icterus 3 cases. All of the 6 cases in the genito-urinary group were of gonorrhœa. There were 3 cases of affections of the joints, viz. 2 of synovitis and 1 of arthritis. The integumentary system gave 10 cases, as it did in 1879. Four cases of alcoholic poisoning were reported, one-half the number for the previous year, and 1 was invalided from this cause. All the 6 cases in the genito-urinary group were of gonorrhœa. The number of diseases from violence was 4, a reduction of 3 from that of 1879, and the loss of service in this class was 992 days.

The following extracts are taken from a very complete and interesting description which has been made by Surgeon G. H. Cooke:

League Island is situated in the Delaware River, near the confluence of the river Schuylkill with that stream, the western end being nearly opposite the mouth of the latter, and is within the corporate limits of the city of Philadelphia. Its length is about 2¼ miles, and its greatest width is about one-half mile, at the Schuylkill end. It is separated from the mainland by a narrow water-way known as the Back Channel, which in former times gave passage to vessels of considerable size. In the year 1866 there was a mile and a half of this channel which was 100 feet wide and 14½ feet deep. At the present time, April, 1881, there are but 7 feet of water in the channel at the western end, and one foot at the eastern end, at low water. The island is distant from the southerly limit of the built-up portion of Philadelphia at Snyder avenue about 2¾ miles; from the new municipal buildings at Broad and Market streets, the center of the old city proper, 4½ miles; from the site of the old navy-yard by water, 6 miles; and from the sea, 70 miles. Latitude of flag-staff, 39° 53′ 14″ north; longitude, 75° 10′ 32″ west. The only land approach to the island is over a causeway and bridge spanning the Back Channel, by way of Broad street, one of the finest avenues in the country, having a width of 120 feet, extending northward from League Island, about midway between the Delaware and Schuylkill rivers, for a distance of 12 miles, to the city line on the north.

The approximate area of government property on and adjacent to League Island is as follows:

	Acres.
Island within dikes	411.57
Back Channel between dikes	305.50
Between south line of Government avenue and Back Channel	37.25
Outside of dike to wharf-line	170.25
Total area of government property	924.57
Approximate area of meadow land on west end	207.08
Approximate area of meadow land on east end	119.53
Total	326.61
Approximate area of arable land on west end	174.50
Approximate area of arable land on east end	90.00
Total	264.50
Total area of fields	326.61
Filled area to grade	31.00
Area of ponds	13.37
Small garden patches	4.50
Dike areas	18.16
Ditch areas	17.93
Total	411.57

	Miles.
Inside ditches west of Broad street, 26,268 linear feet	=4.97
Inside ditches east of Broad street, 12,394.80 linear feet	=2.35
	7.32
Ditches around the dikes, 19,186 linear feet	=3.63
Total length of ditches	10.97

The height of the filled portion of the island above low-water mark is 12 feet. Tota length of dikes, 21,430 feet (4.058 miles). Rise of tide, 6.2 feet.

The surface of League Island is drained by means of open ditches, crossing the land in various directions, having an average depth, when originally built, of about 3 feet, a variable width of from 2 to 6 feet, a total length of 10.95 miles, and an area of 17.93 acres. They discharge their water by means of sluices, closed by gates hung at an angle of about 80°, swinging by hinges placed at the upper edge and opening outwardly. There were formerly a number of these sluices and gates located at various points around the island and discharging into the Delaware, Schuylkill, or Back Channel. Owing to the damaging effect upon the dikes, however, the number of these sluices has been reduced to two, both of which are located in the Back Channel, one to the eastward of the causeway, about half-way between the latter and the eastern end of the island; and the other west of the causeway and near the "Antietam." All the ditches on the island must eventually discharge their waters through either the one or the other of these sluices, and when we consider the great length and number of these ditches, the irregular courses they run, and the extent of surface drained by them, it is not surprising that, during heavy or long-continued rains, the sluices are not capable of performing the work required of them; that the water is backed up and that the drainage of the island is retarded.

Before the property came into possession of the government these ditches were very carefully looked after by the occupants of the different farms—a matter of vital importance to the raising of good and abundant crops upon which their livelihood depended. Since the government has become proprietor, however, these ditches, owing to a lack of sufficient funds to maintain them in perfect condition, have been very much neglected; many have become filled partially or entirely, from natural causes; whilst others have become obstructed by rubbish, weeds, decaying wood, plank from roads, &c., either drifted or recklessly thrown into them. As a consequence the outflow of the water is prevented either wholly or in part; stagnant, slimy pools covered with green vegetation are seen in all directions; the area of decaying vegetable matter is greatly increased and the emanations of malarial poisons vastly augmented. The present commandant is exerting his best endeavors to remedy the evil, and is making

every effort, to the extent which the means at his command will permit, to improve the drainage where most defective. A large sum of money and much time and labor will, however, be required to put the ditches in the perfect condition in which they once were.

There are water-closets for the use of officers, clerks, draughtsmen, &c., located in yards and docks, steam-engineering, construction, and commandant's buildings. They all discharge by 6-inch terra-cotta pipes; those from the commandant's and yards and docks' buildings, uniting near the latter, continuing southward along Broad street to the steam-engineering building, and, being joined by the soil-pipe from the latter, at this point they discharge into a wooden trunk, which then continues along Broad street to the Delaware River, where it opens just to the eastward of the new wharf at the foot of that street. The water closets in construction building discharge into a ditch on the west front of that building.

Cess-pools are located in various parts of the yard as follows: One in rear of engine-house, yards and docks department; one in rear of police station, Broad street, near Back Channel; one in rear of gate-house; one in rear of ordnance building; four on the bank at termination of Broad street, and one in the willow grove. All these are for the use of employés, watchmen, and others. Some of them, however, are inconveniently located, and at so great a distance from the workshops that the workmen will not use them; and as a consequence there are places about the shops and buildings, and even inside these, which are exceedingly offensive despite all efforts made to abate the nuisance. These cess-pools are simply circular excavations in the soil, four or five feet in diameter and of variable depth, and are not walled up. As they fill they are covered up, and others excavated to take their places. Most of the cess-pools of Philadelphia are similarly constructed, except that they are deeper and are loosely walled up with brick, without being laid in cement; the intention being that the liquid portions of the deposits shall percolate the surrounding earth. The effect, particularly in a city of homes like Philadelphia, where, the houses being small and numerous, the cess-pools are correspondingly great in number, is obvious. The system is an enormous source of soil pollution, independent of the vast volumes of foul gases given off into the atmosphere, and the increasing danger from these sources will in due time necessitate a radical change in the mode of disposal of excrementitious matters. No water-closet was attached to this dispensary until the fall of 1880, when, after due representation, a suitable one was built in rear of this office. A 4-inch terra-cotta pipe leads from this a distance of 60 feet to an open ditch, where it discharges. As the ditch is not thoroughly drained and stagnant pools have formed at this point, it is apparent that the place must speedily become offensive and that a remedy will eventually have to be applied.

The Antietam, moored west of the Broad street causeway in the Back Channel, is now used as a barracks for the marine guard, which at present consists of 81 enlisted men officered by a major in command. In order to place the ship in her present position near the causeway a channel had to be dredged for her from the Schuylkill. This channel has nearly filled up again with mud; there is a bar of mud outside of her, and she lies in a bed of the same material, there being less than 2 feet of water under her keel at high water. She is, therefore, moored in the center of a malarious region, the exhalations from which envelop her on all sides; and, in addition to the natural sources of malaria, there are the artificial causes for the generation of miasm, the fæcal matters, offal of the kitchen (except bones and slush, which are saved and sold), &c., which go over the ship's side, lodge in this mud, or are drawn under the ship as she rises on the flood. Lying, as she does, near the causeway and surrounded by a bar of mud, the feeble current of the Back Channel cannot reach her to carry off the waste matters thrown overboard, which hence accumulate near and under her; and these, in greater or less profusion, together with chips, decaying wood, &c., may be seen, at any and all times, either floating near her or exposed to the sun in the mud, already charged with decaying animal and vegetable matters from other sources. The result can easily be imagined. It would be idle, taking all the circumstances into consideration, to endeavor to remedy the evils as they exist and with the ship in her present location. There is but one rational, feasible escape from the difficulty, and that is the erection of a marine barracks upon land and in the most salubrious part of the island, which is undoubtedly the Delaware River front.

The rations of the command, which are furnished under contract by parties outside at a cost of $14.10 per 100 men, are, and have been, of good quality and in sufficient quantity. In addition thereto the commandant of the yard, in the spring of 1880, placed at the disposal of the commanding marine officer a tract of land, of about 5 acres in extent, and located near the Back Channel, which was cultivated as a garden by, and for, the men of the command, as follows: 1½ acres were planted in potatoes, which yielded about 200 bushels; 2½ acres were planted in corn, which yielded an abundance of green sugar corn for the command for three months or more; one-half acre was planted in tomatoes, which were very prolific, the men having all they could desire; one-half acre was planted in okra, beans, lettuce, onions, &c., on which a good sup-

ply of these different vegetables was grown. In addition to these a good supply of beans and turnips were grown on the 1½ acres of land mentioned above after the potatoes were removed. The men of the command were thoroughly well pleased with the additions thus afforded to their means of subsistence, and they hope to obtain even an increased yield from their garden during the approaching season. The marines galley has a cooking capacity for 200 men.

Sanitary.—That League Island and its vicinity, east, north, and west, are malarious and insalubrious admits of no doubt when we consider the character of the soil forming the original island, as well as that which has since been added to it; the humid atmosphere environing it, and the vast tracts of marsh, swamp, bog, and meadow-land, much of which is overflowed at high water, and all of which would thus be submerged were it not for the surrounding dikes, which bound it on the three sides mentioned; the sluggish waters of the Schuylkill, contaminated by the sewage of a portion of the city of Philadelphia, the refuse from the gas and coal-oil works, the abattoirs, and the many industrial establishments situated upon its banks, are backed up by the flood-tide, and by the rapid currents of the Delaware, and thus forced into the Back Channel, the timber basins, &c., where they deposit their suspended impurities and alluvial matter, which deposition takes place at the rate of about one inch yearly. Added to this the truck-farms, covering so large an area of the opposite Neck, are, in large part, manured by the night-soil of Philadelphia, either mixed with other ingredients or used quite pure. The stench from the fields thus manured is almost insupportable, and the atmosphere for miles around is poisoned by the noxious exhalations. As the soil here is already nearly or quite saturated with water whenever there is a fall of rain, but little of this is absorbed by the earth, most of the water running off the land into the ditches and carrying with it much of the sewage which had been spread over the ground as just mentioned; and this, ultimately, nearly all finds its way into the Back Channel. This process goes on almost uninterruptedly the year around, certainly whenever the weather is at all favorable to out-door work.

Scattered all over the Neck are numerous ranges of hog-pens, the swine inhabiting which consume the immense quantities of refuse and garbage from the truck-farms, as well as the offal brought down from the city in carts. The odor from these pens is stifling, and contributes largely toward polluting the atmosphere, to which also the abattoirs, stock-pens, gas and coal-oil works, bone-boiling and fat-rendering establishments, &c., add their full share. When the wind is favorable the stench arising from these covers the whole lower section of Philadelphia and League Island.

Ponds and swamps covered with green slime and rank vegetation, and choked-up ditches and water-courses, in the same condition, are not infrequently met with throughout the region of the Neck, and a similar state of affairs obtains upon League Island itself.

Upon the filled-up portion of the island, composed of the silt dredged from the Back Channel, water is struck at a depth of from 18 inches to 2 feet, notwithstanding the fact that this made land is elevated 8 feet above the original level of the island. Upon the latter, water is struck at a depth of a few inches only. The silt-filling seems to possess the properties of sponge in its manner of soaking up and retaining moisture, and in excavating it it may be cut out with the spade in cubical blocks of the consistency of cheese. These blocks retain their shape while moist only, and all their cohesive property is lost. As the water evaporates from them, they shrink in size, crumble like air-slacked lime, fall into powder, and are scattered by the winds. Heavy teams passing over this made land, a steam engine in motion, &c., produce vibrations of the soil which may be felt for long distances. The pointed piles penetrate this soil with the greatest ease until they reach the substratum of gravel and bowlders, where they are arrested and can be driven no further. The original soil of the island possesses the same properties as the filled-up portions, as is exemplified when it is used in repairing the dikes. Noxious weeds grow in wild luxuriance on any part of the island, but more particularly over the filled-up portions; and several seasons of preparation, rooting out of weeds, deep plowing, &c., are necessary to render the soil fit for the remunerative growth of a crop of any kind.

It is a continual subject of remark on the part of persons approaching the Neck after sunset, from the built-up portions of the city, that as soon as the open fields are reached a cold, damp, heavy atmosphere strikes a chill to the system, and a mist hangs low over the land; which mist increases in density and depth as League Island is approached. Even during the daytime the humidity of the air of the island is perceptible.

There can be no question that League Island presents, in an eminent degree, all the conditions necessary to develop to its fullest intensity the malarial poison.

As to the measures which might be instituted to improve the sanitary condition of the place a vast deal might be said, but it is hardly necessary to more than allude to a few of the more prominent points which present themselves. An almost insuperable difficulty is met with here at the outset, and that is the low level of the original surface of the island, about 2½ feet above low-water mark, so that, by reason of the want

of sufficient fall, surface drainage by means of open ditches is very much impeded and subsoil drainage by means of tilling is rendered next to impossible. And, even were there sufficient elevation to the land to permit a reasonably rapid descent, the nature of the soil, and more particularly of the silt filling from the Back Channel, is such that it will not readily part with its contained water; so that in order to drain it effectually it would be necessary, as it were, to reticulate the land with tiles, and even then it is extremely doubtful if the object desired would be accomplished. Surface drainage by means of open ditches seems, therefore, the most feasible plan to pursue. And if these were judiciously constructed, kept open and clean, and the sluices and gates maintained in thorough repair and working order a vast improvement in the salubrity of the island would result. In proof of this and of the absolute necessity of the work, it may be mentioned that it is estimated that at the present time there are 2,500,000 gallons of stagnant water backed up in the ditches, and 1,225,000 gallons lying outside of them in pools, low places, sink-holes, &c.

From the filled-up portions of the island, which is, however, merely a narrow strip of land comparatively, and elevated 10.5 feet above low-water mark, the surface water runs off without much difficulty.

All water closets, instead of having their outlets into ditches or the Back Channel, should discharge their contents by underground sewers far out into the Delaware. All stagnant pools or ponds should either be filled up or thoroughly drained. All decaying vegetable matter, chips, rotting timber, &c., instead of being spread over the land or thrown into the ditches or water-courses, should be burned or otherwise effectually disposed of. Trees, of which there is such a dearth upon the island, and particularly those varieties which possess in the most eminent degree the property of absorbing moisture, should be plentifully planted all over the island, and grasses should be encouraged to grow wherever possible and kept carefully trimmed.

These are among the minor measures which suggest themselves, and which should be thoroughly carried out. There are, however, extensive works and improvements which have been planned and recommended by the Board of Civil Engineers, appointed by order of the Department of Yards and Docks, dated September 28, 1872, and until these are executed but little benefit will be derived from the measures above suggested. The quay wall, or wharf line, contemplated to be built at the port-warden's line, at 25 feet depth at mean low tide on the Delaware front, should be constructed. This wall should be continued around the entire island, and should also be built on the north side of the Back Channel. The Back Channel should be dredged out clean to the depth determined upon and maintained so, and the silt thus excavated should be used to fill the entire surface of the island to the established grade. In order to prevent, to a very great degree, the large deposit which is now continually taking place, gates might be constructed at both the Delaware and Schuylkill outlets of the Back Channel, and the latter kept full of water, sufficient only being admitted, from time to time, to keep the water pure and sweet. No discharge from sewers, sluices, or creeks, or refuse of any kind should be permitted to enter this basin. * * *

And now, granting that all these works, involving years of labor and the expenditure of millions of money, have been accomplished, and that the island itself has been placed in the most perfect sanitary condition possible, the fact, unfortunately, is yet apparent that the station will still be insalubrious by reason of the extensive tracts of marsh and meadow land embraced in the region of the Neck to the northward, eastward, and westward, and of the swamp and flat lands on the banks of and beyond the Schuylkill, and any winds blowing from the direction in which they lie will reach League Island laden with the malarious exhalations generated by them.

It will not be until the built-up portion of the city of Philadelphia extends over this region, and the marsh lands to the westward of the Schuylkill are reclaimed, that every source of malarial poison will be removed, and League Island become thoroughly salubrious and habitable, and that will not be the case for many years to come.

NAVY-YARD, WASHINGTON, D. C.

There was a notable diminution of the sick-rate at this point, the number treated having fallen from 172 in the previous year to 71 in 1880, the reduction being general and not confined to any particular class. The total number of sick days fell from 1,804 to 534; the daily average number of patients from 2.97 to 1.45; while the average length of treatment increased from 6.30 to 7.31 days. The decrease of the sick-rate seems to have been general, and not confined to any particular group of diseases. In the zymotic group the diminution was from 42 to 28, or 14 in number. These were all malarious in character, excepting 1 case of simple continued fever. The loss of service in this class

was 292 days. The reduction in the class of constitutional diseases was from 10 to 6, which were divided between rheumatic and syphilitic affections. But 2 cases of nervous diseases occurred, 1 each of spinal irritation and paralysis; a reduction of 8 from last year. There were 2 cases of eye diseases, an increase of 1; while the aural and circulatory groups were unrepresented. The absorbent group shows the only increase of rate at this station, 4 cases having been reported, while last year there was but 1. The diseases of the respiratory organs fell to one-fifth the number, 25, of last year; and the digestive group gave 11 cases, less than one-third the number, 35, in 1879. The genito urinary group gave 1 case each of gonorrhœa and paraphymosis, a reduction of 6 from last year. The integumentary class fell from 5 to 3; and there was a very marked falling off in the cases of alcoholic poisoning, of which there were 12 in 1879 and but 2 in 1880. The reduction in diseases from violence was 50 per cent., or from 16 to 8.

NAVY-YARD, NORFOLK, VA.

One hundred and fifty cases of disease were treated at this station, being 10 less than in the preceding year; but there was a slight increase in the number of sick-days, which was 797, while that of 1879 was 722. The average duration of treatment was 5.74 days; the daily average number of sick 2.17, and the ratio per M of cases treated 63.35. Two deaths occurred and 29 were invalided. Next to that at League Island this station suffered most from malarious influences, 56 cases having been reported of fevers of this origin. These included all the cases in the zymotic class, and gave a ratio of 23.37 per M. The loss of service from this class was 247 days, and the average duration of treatment 4.41 days. There were 9 cases of constitutional affection, less than half the number, 20, of last year. Four of these were of rheumatism, and 5 of syphilis; 1 of the latter was invalided. The ratio per M of this class was 3.75, and the loss of service 61 days. The nervous system gave 5 cases, 4 less than for 1879. There was 1 case each of apoplexy, epilepsy, sunstroke, and 2 of mania. The ocular, aural, and circulatory systems yielded each but 1 case, while the pulmonary system afforded 11, 2 more than last year, mostly catarrhal in character. There were besides these 2 cases of pulmonary consumption and 1 of pneumonia. Thirty-one cases were returned in the digestive class of diseases, very nearly the same number as in 1879, the ratio being 12.91 per M, and the loss of service 183 days, or 4.61 per case. The genito urinary system gave 10 cases, or 4 less than last year; 4 each of gonorrhœa and orchitis, and 1 each of canchroid and paraphimosis. The loss of service from these cases was 111 days, and the ratio 4.16 per M. There were 2 cases more of skin diseases than in 1879, or 10 in number, a ratio of 12.91 per M, and the cases of alcoholic poisoning numbered 7, 4 more than in the previous year. Nine cases of injuries were returned, or 6 more than in 1879, giving a ratio of 3.75 per M, and a loss of service of 53 days. They were of the usual character.

The following brief extracts are taken from the report of Surgeon S. D. Kennedy:

> During the winter, and up to within a short time past, a number of cases of small-pox appeared in Portsmouth. At no time during this period was it declared epidemic by the city authorities, and many reports in regard to it proved exaggerated or unfounded. No case of it appeared in the yard. While there have been some quite severe cases of sickness amongst the officers and their families, none of them can be attributed to, or were influenced by, their surroundings further than climatic conditions incident to this region.

A new system of drains is needed, and in the lower part of the yard is urgently demanded. It is impossible to flush out the timber dock as often as it should be done for fear of the "teredo" attacking the wood, and in consequence its condition is unfavorable to health. But the drains now emptying into it, and which carry much deleterious matter, might be changed.

NAVY-YARD, PENSACOLA.

At this station only 20 cases were returned for the year, or 5 less than for 1879. The total number of sick-days was, however, increased by 68, and amounted to 294. The daily average number of patients was therefore increased from .61 to .80, and the average duration of treatment 9.04 days to 14.7 days. The principal cases were: malarious fevers, 3; hydrops, 1; rheumatism, 2; while the remainder was chiefly made up of affections of the digestive system.

Surgeon H. N. Beaumont makes the following report of the station:

The navy-yard, Pensacola, Fla., is situated upon the naval reservation, 30° 20′ 35″ north and longitude 87° 16′ west, and built on the north side of a bay 1¼ miles in width, directly opposite Santa Rosa Island, about 5¼ miles in a southwest direction from the city of Pensacola. The whole inclosure consists of about 78¼ acres, and is surrounded by a brick wall 12¼ feet in height. The soil is composed of white sand, and its surface to the extent of about two-thirds is thinly covered with grass. It is shaded along its principal avenues and in the vicinity of the officers' residences by trees, principally pines, water and live oaks, the two rows of the latter flanking either side of the wide and beautiful Central avenue, running from the commandant's residence, at the head of the avenue, the whole depth of the yard to the bay, forming the most attractive feature of the place. The officers of the Navy who are domiciled in the yard have houses situated on the North avenue, in a line with the central house, occupied by the commanding officer, five being on the west and five on the east side of the central quarters. The house occupied by the commandant is a pleasantly situated, large, square, brick structure, two and a half stories high, with a basement kitchen, surrounded on all sides on the first and second stories with a wide wooden gallery. Its construction is of quite a recent date, and the most approved means of heating, ventilation, and sanitation have been taken into account. It is supplied with a steam-heater, a water-closet, and bath of hot and cold water. The drainage is effected by means of a pipe communicating with the general brick sewer, extending the whole width of the yard, running in the rear of the quarters from east to west, discharging into the bay. Of the remaining ten residences, which are the old one-story kitchens of the officers' quarters which were destroyed during the rebellion, six have been improved by the addition of a second story, galleries constructed around the sides and front of both stories, and wooden kitchens added in the rear. This improvement, besides affording additional room, has rendered the residences much more healthful, particularly in the summer season and during damp weather, when they are almost uninhabitable on the first floors. The four original kitchens, which have not yet undergone this improvement from the fact of their being low, illy ventilated, and dark, are unfit for habitation in their present condition, and especially in the summer and during damp weather. They are so defective as to render the best of these residences insalubrious and disagreeable places of abode, and it is to be hoped that it will not be decided to build up the remaining four kitchens and add additions to those already imperfectly improved, but to construct entirely new residences upon the old foundations of the former houses, reserving the kitchens, if need be, in their present state, for the purposes for which they were originally designed. With the exception of a water drainage for the central quarters, which is the only house supplied with a water-closet, the yard is dependent upon a surface drainage. From the nature of the soil and from the fact that there are no cess-pools in the yard—the excreta being collected and carried off daily—this system answers as well as any other. Formerly each house was connected by means of short drain pipes with the main sewer which conducted in the rear of the quarters, but of late years the house connections have become obliterated, and at the present the central quarters is the only one which is thus connected. Although there are wells in the rear of each set of quarters, the water supplied is brackish, and only used for purposes of irrigation, the water supply for potable purposes being entirely collected from the roofs of the dwellings (which are of slate) and carried by means of metallic conductors to large closed brick cisterns, one of which is furnished to each house. The general supply of water in the yard is obtained in the same manner, there being three large brick cisterns capable of supplying in the aggregate 500,000 gallons.

The naval reservation, upon which is located the Pensacola navy-yard, naval hospital and the adjacent towns of Woolsey and Warrington, occupies the extremity of a peninsula bounded by the Bay of Pensacola on the south, and the Grand Bayou, an arm of the bay, on the north. In area it is about 1,600 acres in extent, the soil of which consists of a surface of white sand, covered more or less with a luxuriant growth consisting principally of the pine, live, water, and scrub oak. The soil is sufficiently deep for subsoil drainage, except where its surface is depressed, and in these localities during the greater part of the year it is covered with water.

Climatology.—The climate is considered salubrious, the winters being very mild with very little frost; the summers long and extremely hot, the warmest weather being in July and August; the prevailing winds during the year are from the northwest. The thermometer ranged in extremes during the year 1880 from 118° above to 7° degrees below; but it should be stated that this has been a remarkable year.

Synopsis of meteorological report for 1880.

	Mean temperature.	Mean height of barometer.	Rainfall.
	°	°	*Inches.*
January	60.01	30.157	1.00
February	58.29	30.175	5.78
March	66.43	30.091	8.05
April	70.96	30.119	5.33
May	75.53	30.047	10.98
June	82.33	30.885	5.37
July	84.52	30.109	11.03
August	82.47	30.049	10.16
September	78.56	30.114	12.80
October	67.95	30.137	9.78
November	56.08	30.230	7.84
December	50.35	30.199	2.87

Annual rainfall 90.99 inches.

Hygiene.—The health of the reservation may be said to be very good, the prevailing diseases being the fevers of the remittent and intermittent types The yellow fever has not had a footing since 1875, when it prevailed at Fort Barrancas, about a mile from the navy-yard; no cases occurring, however, on the naval reservation, with the exception of two marines attached to the picket guard, stationed by the commandant of the yard on the edge of the cedar grove, near the Barrancas fence, and the superintendent of the national cemetery, which is situated about half a mile northeast of Barrancas. Although the yellow fever prevailed here in 1874–'75, and previously at many other periods, as 1863, 1867, there is no evidence of its endemicity, the cause always having been traced to the presence of infected ships and slack quarantine regulations. The last epidemic which occurred on the naval reservation was in 1874, about thirty days after the arrival of infected vessels in quarantine. The epidemic of 1875 was confined to Fort Barrancas, with the exception of the two marines mentioned above, who were on guard duty near the place of infection. The cause of this epidemic is traced to the arrival of the Von Moltke, sailing from Havana and bound for Pascagoula, Miss., which anchored for one night opposite Barrancas, the wind blowing in the direction of the fort. On the 18th day of July, 21 days after the arrival of the Van Moltke, the first case made its appearance, and the disease increased in virulence until the latter part of August, causing a total of 29 deaths. As it was ascertained most positively that no one from the post went on board the vessel, we are reduced to the necessity of supposing that the yellow fever germs were sown broadcast by the wind which blew from the Von Moltke in the direction of Fort Barrancas, or that they were floated ashore by infected articles thrown overboard from the vessel. The drainage of the reservation may be said to be defective, and it has been rendered more so within the last two or three years from the fact that the water running from the slope of Fort Barrancas and the west end of the naval reservation, which formerly flowed into the sea at the western end of the town of Warrington, has been diverted from its natural and most advantageous outlet, with a view of improving the facilities for extinguishing fire; and for which purpose the water, instead of being allowed to find its shortest course and greatest fall to the bay, has been made to traverse the whole length of the principal street of the town, here and there being dammed for the purpose of hose attachment. From this change has resulted the half drained, swampy, and

unhealthy marshes in the vicinity of the places where embankments have been thrown across the original channel, and their surfaces are covered during the greater part of the year and particularly in the summer, when the current is almost entirely interrupted, with decaying vegetable matter. From the nature of the soil, and in consequence of the smallness of the supply of water, the canal becomes nothing more, even with the utmost care, than a series of stagnant pools, which, during the sickly season, cannot fail to be the cause of unhealthfulness, and in case of an epidemic a point for the dissemination and intensification of disease. As a sanitary measure it should be urged that the unnatural ditch be filled up, and by removing the artificial barriers which have been placed in the natural course, permit the water to find its exit through its natural channel, which last should be deepened and kept clean.

NAVY-YARD, MARE ISLAND, CALIFORNIA.

At this station there was an increase of 41 in the number treated over that of last year, the total numbering 131, and giving a ratio of 54.60 per M. The loss of service amounted to 1,558 days, the average duration of the cases was 11.89 days; the daily average number of sick was 4.25, while in 1879 it was but 3. The zymotic class gave 6 cases, double the number of 1879, and these comprised 2 cases each of mumps, erysipelas, and intermittent fever. Fourteen cases of constitutional affections were returned, giving a ratio of 6.68 per M. In this class there was a diminution of 3 from the former year, and it was made up of 12 cases of rheumatism, 2 more than in 1879; and 2 of syphilis, a diminution of 4. The nervous system gave 4 cases, an increase of 1. Thirty-three cases of affections of the respiratory organs were reported, or nearly double the number, 16, of last year, the ratio being 13.74 per M, and giving a loss of service of 380 days. The increase was chiefly due to catarrhal affections, of which there were 25 cases, 15 more than 1879; and there was 1 case each of pneumonia and pleurisy, which gave none last year. The digestive group of diseases also show an increase, 24 cases to 14 in 1879, due to the larger number of admissions for diarrhœa. There were 8 cases of skin disease, 9 of affections of the genito-urinary system, and 17 of diseases from violence, a small increase in all of these classes; 7 classes of alcoholismus were returned, an increase of 3 over last year.

MARINE BARRACKS, N. Y.

From this station a total of 357 cases were reported, an increase of 32 over the number of last year, and giving a ratio of 152.98 per M. Of this number 339 were cured, 17 were invalided, 1 died, and 10 were continued. The daily average number of sick was 6.45, the average length of treatment 6.44 days; and the total loss of service was 2,364 days, or 300 less than for the preceding year. The zymotic cases were 33 in number, a ratio of 13.78 per M; of these 26 were of intermittent fever, and the remainder of vaccina. The class gave a loss of service of 132 days. It furnished last year 28 cases of malarious affections, and a total of 41 cases. There were 49 cases of constitutional diseases, an increase of 10 over the number for 1879, and giving a ratio of 20.42 per M. The loss of service from these was 436, an average per case of 8.89 days. The increase in this class over last year was due to the number of admissions for rheumatism, while the syphilitic cases numbered the same as for 1879, viz, 16. The number of nervous affections increased from 7 in 1879 to 12 in 1880, due to an increase in the cases of neuralgia. Affections of the eye numbered 4 cases, or only one-half that in 1879, the falling off occurring in the cases of conjunctivitis. The number of cases of affections of the circulatory organs was increased from 2 in 1879 to 8 in 1880, which were mostly of palpitation and syncope. The respi-

ratory system, which in 1879 gave 57 cases, furnished 62 cases in 1880, a ratio of 25.84 per M, the increase coming within the catarrhal and asthmatic affections. The loss of service in this class was 367 days. There were 98 cases, or 19 more than in 1879, returned in the group of diseases of the digestive system, the ratio per M being 40.85, and the loss of service 427 days. The increase seems to have been chiefly due to the number of cases of cholera morbus, which was 22, while in 1879 it was but 8; and there was also an increase in the number of admissions for diarrhœa and dysentery. Of pharyngitis, which last year furnished 16 cases, there were in 1880 but 2. The admissions for tonsilitis were the same in both years, 14 cases. The cases coming within the class of the genito-urinary system fell from 35 in 1879 to 21 in 1880, no chancroids having been reported for the latter year, while in the former there were 9. The number of cases of gonorrhœa was also markedly smaller. The number of cases of alcoholic poisoning was 15, or more than double the number, 7, of last year. The loss of service from these cases was 45 days. The integumentary system gave 14 cases, rather less than last year, while there was a decided increase in the number of cases resulting from violence, which was in 1879 27, and in 1880 43. Surgeon E. S. Bogert makes the following remarks with regard to the sanitary condition of the post:

Complaints having been made of the foul condition of the basement of the officers' quarters, it was found that the space under the basement flour was a receptacle for water and filth from broken or defective soil and drain pipes, and other sources. This space, some three or four feet in height, was cleaned out, the water-closets repaired and put in good condition, and a curtain of cement placed outside the wall of the building to prevent access of storm water under the house. A ventilating shaft has since been carried from the soil pipes of the water-closets to the roof of the building, and the place is believed to be now in fair condition. The building, however, is erected upon loosely made ground, has settled considerably from time to time, and the ground under it not being cemented, it may be presumed to be open to noxious exhalations from the soil.

The commanding officer's quarters, a building erected under similar conditions as the officers' quarters, that is, on loose and low-made ground, has been the scene of a great deal of sickness during the last fall and winter seasons. Two cases of pneumonia, one of them fatal, have occurred among the children of the commanding officer's family, and manifestations of malarial disease in various forms have been almost constantly present. I have reason to think that the basement and space under the basement floor are damp and wet, and would recommend that when an opportunity occurs an examination into the matter be made.

The general health of the garrison has been very good. No epidemic or cases of infectious diseases have occurred. During the latter portion of the year diphtheria has prevailed in the city of Brooklyn, and in the vicinity of the barracks, to a considerable extent.

During the hot weather of the summer an unusual number of cases of cholera morbus at one time, occurring mainly among the men detailed on the navy-yard guard, prompted an inquiry as to its cause; when it appeared that the men on duty at the navy-yard gate were using, on account of its greater coolness, the water from an old well which was bored many years since, before the introduction of the Ridgewood water. This water has been at different times examined at the naval laboratory, and is known to be of bad quality. On application to the commandant, the pump was locked so as to stop the use of the water by the marines, and the effect was noticeably apparent in the marked diminution of the number of cases of cholera morbus during the remainder of the season.

Malarial diseases of various types prevail to a moderate extent at this place, but not by any means to the degree that might be anticipated in consideration of the circumstances surrounding the location of the barracks. Of some 26 cases of intermittent fever occurring during the year, I am of the opinion that not more than 10 of them at the most can be considered to have originated at this place.

During the winter season diseases of the air-passages, mostly of catarrhal type, and numerous cases of tonsilitis have been prevalent here during my former experience of this station. The present season, however, although unusually severe, has furnished very much fewer cases of these diseases. The cause of the diminution of sickness in this respect is probably owing to the fact that the marines are now furnished with "arctic overshoes" for wet weather and a head covering more suitable for severe weather than the cap which was formerly worn at all times.

MARINE BARRACKS, WASHINGTON, D. C.

The reports from this station show a very large diminution of the sick-rate, the total number of cases treated in 1879 being 145, while for the year 1880 there were but 46. The total loss of service was 436 days—less than half that of last year—and the daily average of sick was 1.17. There were 2 deaths, and 14 were invalided. In the class of zymotic diseases there were but 9 cases of intermittent fever, while that of constitutional affections gave but 6, mostly of adynamia; 1 of these cases died, and also 1 of anæmia. There was a notable absence of rheumatic and syphilitic affections, in strong contrast with the reports of last year. There were 4 admissions for nervous diseases, 2 of which were invalided for epilepsy and cephalalgia. The respiratory class of diseases afforded 5 cases for treatment—2 of bronchitis, which were invalided, and 1 each of hæmoptysis, phthisis, and pneumonia—all of which were returned to duty. This class furnished last year a total of 20. The diseases of the digestive system, which last year numbered 41 cases, affored, during 1880, but 10. There were 5 cases included in the genito-urinary group, all of which were gonorrhœa, and there were 3 injuries, all of wounds. No cases of alcoholismus were reported.

The following notes with regard to sanitary matters of the post are contained in the report of Medical Inspector S. Robinson:

Some time ago cases of typhoid fever were suspiciously numerous here, and the water from a pump located in the southwest and lowest grade of the parade-ground was found to contain organic matter; the terra cotta drain-pipe which had its run close by was exposed and seen to be plugged and burst by rootlets, which had entered the joints of this pipe seeking food. The well was filled in, the pipes relaid, the sewage carried off, and the fever disappeared.

Although fevers of an intermittent type are in greatest percentage, they are comparatively few. Quite probably, the high walls on all sides of these barracks offer mechanical obstacle to the ingress of the *materies morbi*, and, further, the people within this inclosure are carefully cared for in their dress and dormitories, which, doubtless, are valuable preventives. The city jail, located on the river bank, has a smaller proportion of this type of fever than is found without the walls of the building.

The average strength of this post, all told, for the year, has been 136, who are quartered and mess within the inclosure, with few exceptions.

We are situated approximately in latitude 39 north, longitude 77 west of Greenwich, and have no noticeable departure from climatic change than is observed throughout our country where the same isotherms and isobars are noted. During the twelve months the highest temperature was 98, lowest 13, Fahr. Barometer: highest 30.779, lowest 29.341, with the usual hygrometric variation.

The geological nature of the surface and substrata is favorable to dryness and good drainage, as the waters which fall are quickly carried through the sand and gravel by our riparian slant.

The prevailing diseases are intermittent and kindred fevers, but during the cold, dark days of winter pectoral inflammations are rife.

TORPEDO STATION, NEWPORT, R. I.

There were reported from this station 64 cases, a ratio of 26.67 per M, of which 60 were cured and 4 were continued to the following year. The total number of sick days amounted to 361; the average duration of each case was 5.14 days, and the daily average number of sick was .98. There were reported 1 case each of intermittent fever and anæmia, and 11 cases of rheumatism. Five cases of nervous affections were returned, all of neuralgic character. Of the affections of the respiratory organs, there were 3 cases of bronchitis and 8 of catarrhus. The digestive group furnished 18 cases, while of the genito-uninary group but 1 each of enuresis and ischuria were reported. Nine cases of diseases from injuries were returned. On the whole, the returns from this station corresponded very closely with those of the previous year.

Surgeon W. J. Simon presents a description and sanitary report, in which he says:

The city of Newport, situated on the southwestern shore of the island of Aquidneck (now Rhode Island,) is one of the oldest of New England towns.

The situation of the city is partly upon a slope, which, commencing some distance inland, extends to the waters of Narragansett Bay. The highest elevation is about 100 feet, the descent to the westward being abrupt. The more thickly populated portion of the city is upon the western slope, while to the northward and eastward the houses are more detached, and consist in large part of the villas and residences of the transient population of the place. The city covers an eilliptical space of about two and a half miles in longest diameter, and of less than a mile transversely. The streets are somewhat irregular; the principal ones running parallel with the western shore, while those intersecting, though tortuous, have a general tendency to the east or west. The more important thoroughfares are macadamized or, as in some instances, paved, and are graded sufficiently to remove surface water. They are kept in reasonably good order.

With regard to the geological formation of the vicinity of Newport, the underlying formation is said to be stratified rock, with a "heavy clay subsoil, interrupted by fissures of gravel, sloping similarly to the surface of the ground." This character of soil is favorable for drainage, especially when assisted by the natural conformation of the surface; the elevation on which Newport is situated gradually decreasing from a central point of the city, and extending on the one side to the shore of Narragansett Bay, and on the others to more level plains, which are, however, still capable of drainage. Here, also, winds from all quarters meet with no obstacles, and the freest circulation of air and the most perfect purity of atmosphere are among the advantages which Newport is designed by nature to possess.

Up to the year 1878 Newport had no regular water supply as such. Previous to that date the water used by the inhabitants was obtained entirely from two sources, wells and cisterns. These sources were found both inadequate and unhygienic; inadequate because of the uncertainty of the supply, and in the highest degree unsanitary from the liability to contamination, so potent an element in the production of disease. The city water is now available, from the enterprise of a private company. The water is obtained from a lake to the eastward of Newport, in which a dam has been constructed to prevent any poissible mixture with the sea water not far distant. From this dam water is pumped through filters into a distributing reservoir, situated upon a hill at an altitude of 190 feet above high tide, and thence is carried by gravitation to various parts of the city. The available supply from this source may be estimated at 3,000,000 gallons daily. The lake is fed by a stream which enters it from the northward, and also, it is said, by springs in the immediate vicinity. The quantity and quality of the water is subject to considerable variation, though its general character is good. The following analyses of city water have been furnished by the Sanitary Protective Association of Newport:

Analyses of specimens of Newport water.

[Figures express parts per 100,000 of water.]

	Free ammonia.	Albuminoid ammonia.	Chlorine.	Residue.			Hardness.
				Fixed.	Volatile.	Total.	
City water:							°
From main	0.0026	0.0146	3.6	4	6	10	3
From source, unfiltered	0.0093	0.052	2.4	7.5	7.5	15	4
Wells:							
On elevated	0.0040	0.0092	13.30	29	21.25	50.25	9
On low ground near the bay	0.0186	0.012	14	24	46	70	23

About one-half of the dwellings of Newport derive their water supply from this source, for there is much conservatism here, which clings yet to the old fashioned well and cistern regardless of danger to health. Its more general introduction is, however, but a question of a limited time, especially as preparations are being made toward the opening of a new source of supply to the northward of the city, from which it is hoped

that a more constant quantity will be obtained, while the water will be of better quality.

The climate of Newport is salubrious but variable. During all seasons of the year it is liable to fogs, but the refreshing ocean breezes, together with the opportunities for sea-bathing, and the picturesque scenery, have combined to make the spot, in season, one of the most favored of the health resorts of this country. During the summer the solar heat is moderated by the cooling airs from the Atlantic, and during the winter it is said that the warm current of the Gulf Stream setting against the shores prevents the extreme cold which obtains in towns and cities but a short distance inland, but removed from the influence of the stream. The winter of 1880, so exceptionally severe everywhere, has been marked by lower temperatures here than for many years, while during the same year the month of May was noticeable as having been the hottest and driest May on record for a long time. The accompanying meteorological statistics of Newport for the year 1880 have been furnished through the kindness of the observer of the Army Meteorological Bureau at this point:

Month.	Barometer.			Thermometer.			Mean relative humidity.	Prevailing winds.	Amount of rain or melted snow.	Number of days on which rain or snow fell.
	Monthly mean.	Highest.	Lowest.	Monthly mean.	Highest.	Lowest.				
1880.				°	°	°			*Inches.*	
January	30.17	30.77	29.49	38.3	61.5	15.0	76.5	SW.	2.14	11
February	30.07	30.65	29.18	35.8	56.0	2.5	74.0	W.	3.65	14
March	30.02	30.58	29.29	36.7	59.5	14.0	70.2	NW.	5.93	15
April	29.99	30.37	29.45	45.5	63.0	26.0	70.4	SW.	4.69	11
May	30.05	30.28	29.55	58.4	84.5	37.0	73.4	SW.	1.12	9
June	29.97	30.32	29.46	66.9	86.0	49.0	73.0	SW.	1.95	*
July	29.97	30.16	29.68	71.5	88.0	58.0	76.2	SW.	5.86	14
August	30.06	30.43	29.69	69.2	84.0	53.0	78.8	SW.	7.15	10
September	30.03	30.38	29.63	64.3	87.0	48.0	79.7	SW.	2.80	*
October	30.09	30.38	29.32	53.5	70.0	33.5	72.4	SW.	3.59	*
November	30.21	30.68	29.58	41.1	64.0	15.0	72.2	W.	4.01	9
December	29.95	30.38	29.47	29.7	50.0	1.5	77.8	W.	4.87	15
Sum									47.76	132
Annual mean	30.05	30.45	29.47	50.9	71.1	29.4	74.5			

There is no system of drainage and sewerage in use in the city of Newport, which, designed for the purpose of removing all waste and excreta, accomplishes this object. The surface and subsoil are drained of water by sewers in many of the principal streets, and wherever it has been found convenient the private drains of houses have been connected with these sewers, after having passed through a cesspool which is found in close proximity to nearly every house. The liquid materials are thus carried away from the cesspit, while the solids remain, to be removed from time to time. The inlets to sewers found on many of the street corners and elsewhere for the admission of surface water become, as might be supposed, avenues for the exit of sewer gas which diffuses itself into the surrounding atmosphere.

The existence of "abattoirs" and factories within the limits of the city is a point which is receiving the attention of the authorities, and their removal to more suitable localities is being gradually accomplished.

The population of Newport in 1875 was estimated at 14,028. By the census of 1880 this number had increased to 15,698. The following is an abstract of the vital statistics of the city for the years 1876, 1877, 1878, and 1879, also a more extended account of the causes of death for the year 1880.

The latter, taken from the records in the office of the city clerk, is as correct as the rather indefinite nomenclature of diseases, used there in reporting deaths, will allow it to be.

Vital statistics of Newport, R. I., for 1876, 1877, 1878, 1879.

Year.	Population.	Total deaths.	Annual death rate per 1,000.	Zymotic diseases.	General diseases not localized.	Diseases nervous system.	Diseases respiratory system.	Diseases circulatory system.	Diseases digestive system.	Diseases urinary system.	Diseases generative system.	Diseases locomotive system.	Diseases integument.	Old age.	External causes.	Cause not stated.
1876	14,028	203	14.5	48	24	20	46	7	11	9	1	2	.....	18	9	4
1877	14,028	189	13.5	39	28	29	31	7	15	1	.....	1	1	20	6	3
1878	14,028	223	15.1	39	16	29	48	9	13	3	1	1	2	21	8	3
1879	15,698	264	16.8	61	32	45	53	12	4	3	1	2	.....	18	5	8

Table of deaths, with principal causes, Newport, R. I., 1880.

Months.	Population.	Deaths.	Annual death rate per 1,000.	Consumption.	Croup.	Diarrheal diseases.	Fevers. Diphtheria.	Fevers. Enteric.	Fevers. Malarial.	Fevers. Scarlet.	Lung diseases.	Measles.	Puerperal diseases.	Small-pox.	Whooping-cough.	Cardiac diseases.	Diseases digestive system.	Diseases brain and cord.	Diseases urinary system.	Other diseases and accidents.
January		22	.....	.....	.....	.....	.....	.....	.....	1	3	.....	.....	.....	.....	2	.....	3	.....	7
February		19	.....	2	.....	.....	.....	.....	.....	.....	5	.....	.....	.....	.....	2	.....	4	.....	5
March		20	.....	1	.....	.....	1	.....	.....	.....	6	.....	.....	.....	.....	2	.....	1	1	5
April		12	.....	5	.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	.....	4
May		24	.....	5	.....	1	.....	.....	.....	1	1	.....	.....	.....	.....	1	4	.....	1	7
June		12	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	2	.....	4	.....	5
July		29	.....	.....	.....	3	.....	.....	.....	1	4	.....	1	.....	.....	3	3	6	1	7
August		32	.....	1	.....	4	.....	1	.....	.....	1	.....	1	.....	.....	2	1	2	1	7
September		24	.....	2	.....	3	.....	1	.....	.....	2	.....	1	.....	.....	2	2	2	1	7
October		26	.....	5	2	.....	.....	1	.....	.....	1	.....	2	.....	.....	2	1	3	1	8
November		11	.....	1	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	1	.....	.....	.....	4
December		32	.....	1	1	1	.....	.....	.....	1	1	.....	.....	.....	2	3	1	1	2	8
Total for year	15,698	243	15.4	24	3	12	2	3	.....	5	26	.....	5	.....	2	24	15	32	14	78

The only public institution here for the treatment of sick is the Newport Hospital, supported partly by endowment and partly by voluntary contribution, and capable of accommodating about twenty patients.

The torpedo station is situated on Goat Island, immediately opposite the city of Newport. The island lies north and south, being about 2,500 feet in length and 600 in greatest width. It is low, the highest elevation being the artificial ramparts of the old Fort Wolcott, which still remain. The soil is sandy, with a subsoil of clay with underlying rock. The island is neatly graded and effectively drained; its walks are kept in good order, and its general appearance indicates the care that has been bestowed upon it.

The personnel of the station consists of nine commissioned officers in addition to the commanding officer, and of five warrant officers. There is also a professor of electricity and a professor of chemistry. During the lecture season, from the 1st of June until the 1st of September, the number of officers is increased by the class ordered here for instruction and for attendance on the course of lectures. There are twenty-five shipped men on duty at the station, and a variable number of workmen from civil life, employed in the different departments. The men are shipped for one year on special service. They have quarters on board the tug-boat Nona. The great majority of them being married men, they are allowed to spend each alternate night with their families at Newport. One half of the number, therefore, remain on board the Nona each night, and sleep upon the berth-deck, which is large enough to provide ample accommodation for them. The food furnished them is of good quality, the rations being commuted and the mess furnished with a supply of fresh meats and vegetables from the markets of Newport. The water used at the torpedo station is from two sources, wells and cisterns. The quality of this water varies somewhat in different parts of the island; but by judicious selection a supply of reasonably good water may be obtained.

The accompanying analyses, furnished by Professor Hill, the chemist of the station, indicate the general character of the water:

Analyses of specimens of water of torpedo station.

GENERAL ANALYSIS.

Source.	Total in 1,000,000 parts.	Solid constituents in 1,000,000 parts.									
		Calcium.	Magnesia.	Potassium.	Sodium.	Iron and alumina.	SO_3.	Cl.	CO_2.	Silica.	Organic matter.
South well	159.9	13.9	5.2	7.7	27	1.2	32.9	45.2	16.2	16.6	Trace.
Laboratory well	302.1	59.4	8.9	3	28	3.5	39.6	50.1	83.4	25.9	Trace.
Machine-shop well	289.8	62.6	15.8	5.5	18	2.1	34.2	39	107	5	Trace.
Machine-shop closed well	155.6	22.4	6.6	4.5	18	1.4	24.1	35.2	32.9	10	.....

Analysis for organic matter.

Organic matter.	Parts per million.			
	Cistern, north end office building.	Cistern, cottage No. 1.	Well, south end of island.	Cistern, commandant's house.
	1.	2.	3.	4.
Free ammonia	0.32	0.62	0.00	0.22
Albuminoid ammonia	0.16	0.16	0.10	0.12
Lead, grains per gallon	.....	.....	.....	0.55

Nos. 1 and 2.—Organic matter of vegetable origin.
No. 3.—Water used for drinking only.
No. 4.—Specimen contained lead as referred to.

There are seven residences for officers on the island. These are well-built and comfortable cottages facing the east. Being open on all sides, and furnished with ample windows, they are susceptible of free ventilation. The drainage is good, each house having a separate discharge-pipe emptying into the bay. The pipes discharging on the west shore of the island do not, however, reach to low-water mark, and should be extended. They are fitted with openings for periodic flushing. Several of the houses are provided with ventilating tubes from the water-closets to above the roof. This important addition should be placed in those houses now without it.

On the whole, the sanitary conditions of the torpedo station are good, much attention has been given to the subject of proper drainage, and there seems to be but little cause for criticism on this point. As the island is in an exposed situation, it is subject to greater extremes of temperature than the more sheltered districts of Newport. The meteorological conditions affecting Newport apply also to this station, with the probable exception mentioned above.

During a portion of the year the continued ill-health of the commanding officer and some of the members of his family led to an examination of the water used in his house. This analysis, which is among those presented, disclosed the presence of lead derived from the pipes and from the lining of the water-tank. I believe this defect has been remedied in some of the houses. The improvement should be extended to them all.

NAVAL STATION, NEW LONDON, CONN.

There was treated at this station a total of 9 cases, of which 8 were returned to duty and 1 died. The number of sick days amounted to 103, the average duration of treatment was 11.44 days, and the daily average number of sick .28. These figures show a considerable ratio of increase over those for 1879, due to the number of admissions for neuralgic affections. There were 2 admissions for affections of the circulatory organs, but none for those of the respiratory group.

The following description of the station is by Surgeon M. C. Drennon:

In the year 1868 the State of Connecticut conveyed to the United States a tract of land on the east bank of the Thames River, about 3 miles above New London, for naval uses. This tract is nearly 7 miles from Long Island Sound. It has a mile of water front, and extends back 600 feet; it contains 83 acres, and it is claimed that the area of it will be increased to 100 acres when graded and the irregularities of the water front are filled in. The soil is loam, mixed with gravel and sand. On the grounds is a good stone quarry, and back of them a high hill, from which sufficient material can be obtained to build all the walls, docks, and buildings pertaining to a naval establishment of the first class. Houses have been erected for, and are used by the civil engineer, boatswain, and carpenter. A large wharf, 2 brick store-houses, a frame barn, a blacksmith shop, and a small wooden building for use of the officer of the day, the ship-keepers, and watchmen, have been built, and a large one-story building, to be used as a drill-room for naval apprentices, is now in course of erection. The houses at the station are supplied with water from wells on the premises; it is of good quality and abundant in quantity. A steam pump was tried on a well located near the first store-house, and from it sufficient water was drawn for the use of U. S. S Minnesota, without a perceptible diminution of the quantity in the well. A small stream of potable water runs through the upper part of the yard, but in very dry weather this supply fails. The banks of the Thames River at this place slope gradually upward from it, leaving no marshy spots or pools of stagnant water, and there are no malarial diseases which originated in exposure to influences at this station. If the government decide to continue the building up of this place, a small frame hospital, to contain about 50 beds, would be very desirable, to which patients could be sent whose health has become impaired by malaria while on duty in either Atlantic squadron. An inexpensive wooden structure of this kind could be replaced by a larger one of brick, whenever the needs of the service required the change. Land in the immediate vicinity of the station is of little value for agricultural purposes, but will answer very well for building lots. The business offices of the station are in the custom-house in New London. When the government steam-launch is in running order, it makes trips at stated hours on working days between the town and the station; but if it be laid up for repairs, communication between the two places is by crossing the ferry to Groton, on the opposite bank of the river, and from there by conveyance or on foot over a narrow and dangerous road.

By the last census, New London has a population of over 11,000. It is an old town, situated about midway between Boston and New York. The older part is built on low ground; the new part on moderately high hills. It has fine natural drainage, but no system of sewerage has been adopted. The city has, in general, had a good reputa-

tion for healthfulness, but there were during the year 1880 several epidemics of severe cases. Small-pox was imported from Philadelphia, and 5 deaths occurred from this disease. An epidemic of scarlet fever prevailed during the winter, from which there were 16 deaths. Several cases of typhoid fever, resulting from bad drainage, were reported, and early in the fall diphtheria of a malignant type broke out in the lower part of the town, which soon became epidemic, and continued so at the close of the year. The great mortality attending this outbreak called the attention of the community to a knowledge of the danger to health attendant upon overflowing privies and bad drainage. The municipal council have obtained authority from the State legislature to submit a proposal for borrowing money for the purpose of constructing proper sewers to a vote of the citizens of the town.

An abundant supply of water is brought from a mountain lake some miles distant and distributed to every part of the town. Ordinarily this water is very good, but in the very dry weather of the past year the supply in the lake ran low, the water becoming unpleasant to the taste, and if left standing in open vessels for a few hours offensive to the smell.

SPECIAL DUTY, NEW YORK.

The medical officer on general duty at this station reported a total of 23 cases treated during the year, 2 of which resulted in death, while 2 were invalided and 17 cured. The number of sick-days amounted to 3 5; the average duration of treatment was 17.17 days, and the average number of sick 1.07. Although there was an increase in the number of cases, the loss of service was less by 100 days, the duration of treatment being only one-half that of the former year. Eight cases of intermittent fever were treated, 1 of which died; while in 1879 there were no returns in the zymotic class. Of the constitutional diseases, there were reported 3 cases of anæmia and 49 of rheumatism. The respiratory system yielded 2 cases each of catarrhus and laryngitis. One case of peritonitis occurred, which resulted in death.

SPECIAL DUTY, PHILADELPHIA, PA.

Four cases were reported from this station, 2 of which were cured and 2 were continued. These included 1 case each of the following affections: podagra, senectus, paralysis, and pleuritis. The average duration of treatment was 55.75 days, and the total number of sick-days 223

NAVAL ACADEMY, ANNAPOLIS, MD.

From this station the number of cases reported as treated during the year was 934, being 134 less than that of the previous year; giving the ratio of 389 per M. Of this number 906 were cured, 10 were invalided, and 4 died; the remaining 14 were continued to the following year. The daily average number of sick was 9.83; the average length of treatment 3.85 days, and the total number of sick-days 3,600. The number of cases of zymotic disease fell from 125 in 1879 to 93 in 1880, a diminution of 32, the difference being accounted for in the non-appearance of epidemic catarrh, which prevailed last year, when it furnished 36 cases. There were 71 cases of intermittent fever, 4 less than last year. Two cases of typhoid fever were reported, and these were the only ones which occurred at the naval stations; 1 of them resulted fatally. Fifteen cases of febricula, 29 of remittent fever, and 1 each of whooping-cough and measles were reported. The total loss of service from this class was 406 days, an average of 4.36 per case. The constitutional class of diseases gave a total of 56 cases, or a ratio of 38.76 per M. This was an increase of 11 cases over last year, due to an increase in the admissions for rheumatic affections, which this year numbered 37, while in 1879 they

were but 23. The syphilitic cases, as in 1879, were 3 in number. There were 4 cases of gout and 4 of debility. The total loss of service from this class was 441 days, or 1.20 per man. Diseases of the nervous system gave a total of 187 cases, a falling off from last year of 44; the ratio being 77.94 per M, and the loss of service 326 days. As last year, the largest factor of this group was headache, which gave 162 cases, but these were 39 less than in 1879. There were 17 cases of neuralgia, 2 of myalgia, and 1 each of neurasthenia and lypothymia. There were 33 cases of ocular diseases, three-fifths the number in 1879; 24 of these were conjunctivitis, 2 of asthenopia, 2 of ophthalmia tarsi, and 4 of hordeolum. Ophthalmia, which in 1879 gave 18 cases, was represented in 1880 by a single case. The whole number of sick-days from this group was 173. There were 154 admissions for diseases of the respiratory organs, a ratio of 64.19 per M, very nearly corresponding to that of last year. The loss of service from affections of this class was 575 days, or 3.73 days for each case, and the daily average of sick was .65. Of the whole number 144 were bronchial and catarrhal affections, and there was 1 case, respectively, of pneumonia and pleuritis; 6 cases of pulmonary phthisis were treated. The diseases of the digestive organs were more numerous than those of any other class, the total being 221, or 40 less than in the previous year. The ratio per M of sick of this class was 93.37, and the total loss of service amounted to 617 days, or an average of 2.75 days for each case. Diarrhœa and dyspepsia were more frequent than last year, while pharyngitis and tonsillitis were only half as common. There was 1 case of peritonitis, which was fatal. Affections of the genito-urinary organs were rather less numerous than last year, and numbered in all 18 cases, or 5.83 per M. Gonorrhœa gave 5 of this number, less than half the number (11) of last year; orchitis and epidydimitis, 2 each, while the remainder were single cases of balanitis, chancroid, cystitis, phymosis, and urethral stricture. The loss of service from this class was 163 days, an average of .44, and the average length of treatment was 11.64 days. There were admitted under the head of integumentary diseases 42 cases, a ratio of 17.50 per M. The most common of these were furunculus, 21 cases, and abscess, 10 cases. The whole numbered 8 less than last year, and gave a loss of 246 sick-days, or 5.85 per man. Of cases of poisoning there were 9 of alcoholismus, 1 of ebriositas, and 1 of poisoned wound, a ratio of 4.58 per M, and giving a result of 18 sick-days, or 1.63 per man. Of cases resulting from violence there were 84, or 35 per M, and the total number of sick-days from these amounted to 540, or 6.42 per man. The daily average number of these cases was 1.47.

Medical Inspector A. C. Gorgas makes the following notes respecting the sanitary matters of the Academy:

In consequence of the mildness of the season, the first quarter of the year was an extraordinarily healthy one, and this fact shows how ill-founded is the popular idea that warm, snowless, and iceless winters are unwholesome, and that "a green Christmas makes a fat churchyard." The first quarter of 1881, since which this report has been written, a very cold season, exhibits 446 admissions to the sick-list, a return to the figures of the cold season of 1879.

The second and third quarters of 1880 show about the usual proportion of sick, but during the fourth quarter, the beginning of the excessively cold winter of 1880–'81, the number of admissions was greater than in the corresponding period of the preceding year, and two cases of typhoid fever, one of which was fatal, occurred. Both these cases were clearly traceable to distant points.

The fatal case, that of a cadet-midshipman, began at Columbus, Ga., where two other members of his family were taken with the same disease at the same time, one of whom also died. The other case, that of one of the professors, was acquired at Vineyard Haven, where the victim was investigating the causes of the very disease with which he was attacked himself, and which had been prevalent among the sum-

mer boarders there for several years, a matter of no surprise, in view of the condition of the cess-pools and wells found by the professor to his own detriment.

Two sudden deaths, one from the bursting of a peri-typhlitic abscess, causing fatal peritonitis, and one from malignant erysipelas; and another from acute phthisis pulmonalis, following pneumonia, made up the sum of four for the year. These cases all took place during the fourth quarter. None of these deaths seem due to any local zymotic cause.

The case of erysipelas was caused by an act of imprudence in leaving a heated room to walk out into the cold night air, and aggravated by participation in the athletic sports on the Thanksgiving Day holiday.

Of intermittent and remittent fevers there were 63 cases during the year, apportioned for the quarters as follows:

	Cases.
First quarter	14
Second quarter	24
Third quarter	12
Fourth quarter	13
Total	63

Although the third quarter shows fewer cases than the others, in reality the proportion of cases to those of other diseases is greatest, as well as to the number of persons present; the cadets during that quarter being absent on the practice cruise, or on leave of absence. The 12 cases in this quarter represent one-fifth of all the admissions to the sick-list, while in the first, second, and fourth quarters the proportion of malarial fevers is respectively one-sixteenth, one-tenth, and one-twenty-seventh.

The cadets being absent from the Academy every year, during the period when the malarial fevers prevail, are comparatively exempt from malarial influences, although it must be acknowledged that these are observable in other affections, and no doubt contribute to the numerous headaches and vague trivial disorders which appear in such numbers upon our reports of sick; and the absence, somewhat remarkable, of the ruddiness and freshness natural to their age among the cadets, often a subject of comment, is to be attributed in part to the same cause. This sallowness and paleness have been especially noticed during the autumn and winter of 1880-'81, and have been due also to the indoor life the severe cold has compelled, and the suspension of the open-air drills and exercises, but principally, I believe, to the practice of smoking tobacco tolerated at the Academy.

In a letter addressed to the Board of Visitors of 1880, I recommended the use of tobacco to be forbidden. This recommendation was made because I had reason, both from my own observation and that of several of the professors and instructors, to believe that the use of tobacco had the following bad effects upon the cadets, viz:

1. Diminished power of application to study.
2. Loss of muscular co-ordinative control.
3. Headaches, and various nervous and visceral derangements.
4. Impairment of sight.
5. Cardiac disorder.

These were the most immediate, positive effects of tobacco as indulged in by the cadets.

Besides these were the foul rooms in which they slept, especially uncomfortable and noxious to those non-smokers who had to tolerate the practices of their room-mates, and endure the stifling atmosphere, for the creation of which they were not responsible, and for which they had no compensatory enjoyment.

Although no cases of disease, traceable to any local cause except malaria, have occurred during the year among the cadets, diphtheria appeared in the quarters of one of the officers, and shortly after the beginning of 1881 a case of scarlatina broke out in the family of another officer, which spread the disease to two sisters, but did not extend beyond the immediate family. This case, that of a child of seventeen months, seemed to be original. There was no other case within the limits of the Naval Academy, and the child had not gone outside of the gates, and there were no cases of the disease, known at least, in the town.

In the house in which the case of diphtheria occurred nothing could be found amiss with the drains, excepting that the pipe for the relief of the gas in the sewers, beyond the water-closet trap, projected up through the roof of the back buildings so as to be on a level with the rear windows of the main house. This may have permitted the sewer gas to be blown in through these windows, and the defect was corrected by extending the pipe up above the house-top.

The sewer-pipes of the Academy, the course of which is described in the last sanitary report by my predecessor, Dr. Gihon, empty into the river through the sea-wall some feet above the level of high tide, so that the apertures are never covered by the water. In certain directions of the wind the gas contained in these pipes was

found to be forced back through the traps into the buildings and quarters. This was especially the case in the cadets' hospital, where, at times, the stench was intolerable. I at first recommended, to correct this, that the outlet of the sewers should be placed below low-water by extending the mains; but as this was an expensive and difficult matter, I devised a simple plan to prevent the ingress of air by placing over the mouth of each main a swinging iron plate, which, permitting the outflow of the sewage, acted as a valve against the draughts of wind. This arrangement has completely corrected this serious defect; but there is another objection to the present system of sewerage, and that is, that when a very low tide occurs the sewage is deposited upon the exposed sand and mud, and when the wind blows from that direction towards the grounds the effluvia is wafted over the park and into the quarters of the cadets and officers, so that it is still desirable to extend the main pipes out below low-water. Besides these defects in the sewerage, a more modern and better system of bowls for the water-closets is to be desired. The water-closets of the cadets are very properly placed in separate buildings outside of the dormitories, but there are urinals in the new quarters which ought to be removed, and the covered way to the latrines, used only in wet weather, acts as a conductor of foul vapors from these to the new quarters, so that sometimes, when the doors are open, the odor is perceptible on the upper floor of this dormitory. The subject of the drains is as important as any other connected with the hygiene of this institution.

While immunity from zymotic diseases has been enjoyed by the cadets during the last few years, it must be remembered that there have been cases of typhoid fever in years past, and that in the quarters of the officers deaths from typhoid fever and diphtheria have taken place within five or six years.

In other respects the hygiene of the academy is fair. It is to be regretted that no system of ventilation has been applied to the buildings; indeed, in some of the old quarters the chimneys have been bricked up. I have recommended ventilators to be attached to these, and doors, instead of chimney-boards, to be placed on the hearths of those still left open.

A new building was erected during the summer for a laundry which has freed the ground floor of the new quarters from what was a source of discomfort, and has given room there for a greater number of baths. The old quarters are unfortunately unprovided with baths, and I think it would be advantageous to provide the cadets with flat tubs in their rooms that regular morning ablutions might be taken without the need of going to the distant bath-rooms. Last summer a new swimming-bath was erected, much larger than the old one, and provided with an arrangement of steam-pipes for heating the water in winter.

The cadets' kitchen is in the basement of the new quarters. The cooking is done by means of a range, so that all the meats are baked instead of roasted, but are very well cooked notwithstanding. Steam is used as well. The objection to the kitchen is its situation, its odors being perceptible in the drawing-room in the attic.

An extension of the new quarters is to be desired, so as to lodge all the cadets in more complete proximity to each other and to give more room, particularly at the beginning of the academic year, when considerable crowding is sometimes necessary to berth them all.

The topography of this station has been so well given in previous annual sanitary reports by my predecessor that I think it unnecessary to go over the subject again.

The population of Annapolis by the last census was 6,700, of which number 3,000 were negroes and colored. It is to be regretted that no registration is made of either births or deaths.

The following mortuary report of Annapolis for the last six years is taken from the records of interments kept at the cemeteries:

Year.	White.		Colored.		Total white.	Total colored.	Total.
	Adults.	Children under 10.	Adults.	Children under 10.			
1875	44	29	34	58	73	92	165
1876	42	34	37	42	76	79	155
1877	32	69	28	63	101	92	192
1878	30	45	31	42	75	73	148
1879	29	44	40	50	73	90	163
1880	46	38	35	60	84	95	179

The deaths per thousand for these six years averaged about 24, but among the white population the average was but 21 per thousand, while the colored people died at the rate of 29.8 per thousand.

The apparent ethnological significance of this disparity is diminished when it is taken into consideration that the colored people form the lowest and poorest class, and naturally furnish the greatest number of deaths here, as the same class of all races does everywhere else.

It has been my experience here, which has been confirmed by the medical men of the neighborhood, that the colored people, including the purest blacks, enjoy no immunity from the malarial fevers of this region. On the contrary, it is said that the greatest number of cases of these fevers in the town occur among the negroes who came here from more miasmatic districts in the neighborhood.

There is good reason to believe that there is less malarial disease at the Naval Academy, and in its immediate neighborhod, than formerly, and that the salubrity of the place is increasing.

In the autobiography of Commodore Morris he narrates that in 1813 "220 officers and men, with 100 marines, were sent to Annapolis as an additional protection to that city. Service in and near forts which were situated near the water in and opposite the place had produced attacks of intermittent fever which affected all of the detachment and rendered upwards of 70 unfit for duty before we returned to Washington." This force remained at Annapolis from the 12th August until the 18th September.

The sailors and marines here now have suffered but little from fevers of late years. In 1879 there were 27 cases, and in 1880, 31 of malarial fevers among the officers, seamen, marines, and laborers, who number about 300. Most of these cases are mild intermittent, but occasionally severe and sometimes fatal remittents occur. The improvement in this respect is due to drainage, the recovery of swamps, and particularly to the embankment of the Academy water-front.

At the experimental battery, on the opposite shore of the Severn River, which had the reputation some years ago of being one of the most malarious places in the vicinity, the change has been most notable, and is due to the judicious ditching and the careful filling up of the marshy shores with oyster-shells.

On the 1st September, 1873, I took charge of the Naval Hospital at Strawberry Hill, about a mile distant from the Naval Academy. This was then considered one of the most unwholesome sites in the neighborhood. Some years previous the almshouse was the old dwelling occupied by the proprietor of the farm, by which name the land now part of the Naval Academy grounds, on that side of College Creek, is still familiarly known. There was so much sickness and so many deaths occurred among the beneficiaries that, a short time before the land was purchased by the government, it had been abandoned as being too unhealthy for such an institution. The deaths were supposed to be caused by malarial fevers, but I am inclined to think, from an inspection of the surroundings, that the fatal disease was typhoid fever, and that the cause was the poisoning of the drinking-water in the well by the permeations from the latrines. Whatever might have been the origin of the diseases in the old almshouse, there was no doubt that malaria was at work when I joined. My immediate predecessor has just had intermittent fever, after a residence of a few weeks; his predecessor had had malarial fever, and was still ill from its effects in town; the apothecary I found shaking with a chill in his bed; the laundress was down with a severe attack; the gardener was just convalescent from typho-malarial fever. There was a dismal history of miasmatic disease attached to nearly every servant employed in the hospital, and it was said that many of the workmen who had taken part in the erection of the building had been taken ill, and that none of them had stopped there over night without contracting fever. I thought it a very bad place for a hospital. Under the bank upon which the hospital building stands, and towards the peach orchard, there was a marsh. I had a deep ditch dug through this and completely drained it, and at the same time corrected defects in the water courses on and from the plateau above so as to lead the flow of rain into an opposite meadow, which naturally drained into the river. I purchased 1,500 bushels of gas-house lime and spread it over all the grass land on the hospital grounds. This I repeated each year, in October, while I was attached to the hospital. What effect these may have had upon the sanitary condition of the place I do not venture to say, but there was not a single case of original malarial fever there afterwards during the rest of my residence, about three and three-fourths years.

Below the hospital grounds, and on the land owned by the Naval Academy, there are two marshy banks, one an extensive one, of several acres, on the Severn side of the peninsula, and the other much smaller, on College Creek. I believe it would be of benefit to the healthfulness, not only of the Naval Academy, but also of the city of Annapolis, to reclaim these, and I think an embankment of oyster shells, a cheap commodity here, and ditching would effect this inexpensively.

The naval hospital at Strawberry Hill was closed in 1876, and in 1879 the furniture was distributed to various other naval hospitals. A few beds and one furnished room

are left, to provide for the emergency of contagious disease at the Naval Academy. For this purpose this hospital has stood in good stead on several occasions. Measles, mumps, scarlatina, variola, varioloid, varicella, and erysipelas have, at various times, broken out in the Academy, and the extension of these diseases has been prevented by prompt removal of the cases to this place. I regret to say that the deterioration of this building is advancing at such a rapid rate, for want of repair, that in a very short time it will be unavailable for this important purpose, and that even now the leakage of rain, and particularly of snow water, through the roofs during the winter, makes it an uncomfortable, and, from the frequent falling of plaster from the ceilings, a somewhat dangerous dwelling.

The cadet hospital at the Academy has been sufficient for the needs of the cadets during the year. It contains room for about 18 patients, and is well adapted for sick-quarters. In common with the other quarters the water-closets, especially the bowls, are defective. The attempt to place these offices outside of the building has not been an entire success. As the door opens directly into the house, the towers which have been built to contain them have only enlarged the hospital without in any way cutting off the emanations, the only advantage being that more windows open into them, and they are, perhaps, in consequence, a little better ventilated. The pipes have been frequently frozen during this winter, and have given great trouble. The advantage of a tower can only be gained by having it entirely separate, and approachable only by galleries from a lower floor of the building to a higher one in the closet, and furnished with double swinging doors; while a roof ventilation favored by the steam pipes, or some convenient chimney flue, should be applied to carry off the sewer-gas from behind the traps.

There were 28 candidates for admission as cadet-midshipmen examined in June and 38 in September. Of these 4 were rejected for physical defects, 2 from feeble constitution, 1 for retarded development and deficient teeth, and 1 for venereal disease. Of 27 candidates for cadet-engineer 1 was rejected for color blindness, and another for tendency to pulmonary disease and imperfect development. In November a careful examination of the *personnel* of the Academy for color blindness was made, and out of 515 persons *three* were found color blind, being unable to tell red from green, and *six* were possessed of "feeble chromatic sense."

The marines now occupy a shed built upon a pier leading out to the gunnery ship Santee. The air space in this, as indicated by the boundaries of the floor, roof, and the four walls, is far below what is considered to be the wholesome minimum; but the excellent ventilation secured by the very faults in its construction and the numerous holes and cracks which abound, exhibits its effects in the extreme healthfulness of the men, who, excluding alcoholism, venereal affections, and accidents, are more exempt from disease than any other class, not excepting the officers and professors. Their dormitory is built out over the water, which never falls so as to expose the bottom below the barracks, so that there is no trouble with drainage; the exposure is such that the prevailing wind in summer blows directly across and through the numerous windows, and the care of the commanding officer keeps the place the perfection of cleanliness.

A new barracks is to be built this summer. This is to be built on "made ground," and near the outlets of two sewers. The latter is a remediable defect; and experience here has shown that the houses built on the "made" land are as wholesome as any of the others in the Academy.

For the last year or two the cadets entering in June have been sent to sea on the practice-ships, instead of remaining on board the Santee. This has been a good sanitary measure. The sanitary history of this institution would be very different were the cadets kept here during the summer months; and the comparative immunity from the malarial fevers enjoyed by the cadets is largely due to their being away when the causes of these are in most active operation.

Although extreme heat is felt here in the early part of June, and sometimes even in May and October, the climate of Annapolis for the period of the academic year is a cool one: the average temperature for the whole year being about 54° or 55° Fahrenheit, but for the eight months from October 1 to May 31 it is about 10° cooler. This includes, however, the greatest extremes, from the 90s in May and June down to 10° or 15° below zero in midwinter.

SPECIAL DUTY, WASHINGTON, D. C.

This service includes attendance upon officers attached to the department and those upon special duty in Washington; all officers, in fact, who may be in the city and not attached to stations provided with medical officers. Besides this large class, there are many retired officers who are furnished with medical attendance and medicines. As these

attentions are extended to the families of both these classes of officers. this service presents a wide and extensive field of labor. The figures given in the tabulated statement and these remarks include only those upon the active list of the Navy, so that they by no means represent the full amount of service performed. The total number of cases reported for the year from this station was 193, a ratio per M of 80.45; 2 of these died, 181 were cured, and the remaining 10 were continued for treatment. The whole number of sick-days amounted to 3,083, the daily average number of sick was 8.42, and the average duration of treatment 15.97 days. The reports show an increase of 35 cases over the previous year, but a diminution of 1,211 sick-days, and therefore a reduction of about 12 days in the average duration of the cases. The number of admissions for zymotic diseases was 67, a ratio of 27.92 per M. The increase over last year's total was 39, due to the larger number of malarious affections and to 5 cases of epidemic catarrh. The whole number of sick-days from affections of this class was 513, and the daily average length of treatment 7.65 days. The cases of constitutional affections numbered 25, which gives a ratio of 10.42 per M. There were 680 sick-days, a daily average of 185, and the average duration of treatment was 27.2 days; 8 of the cases were anæmia, 12 of rheumatism, 3 of gout, and 2 of syphilis. The class of nervous diseases furnished 13 cases, a ratio of 5.41 per M, an increase in number of 5. They included 1 case of irritatio spinalis, 3 of insomnia, 5 of neuralgia, 3 of paralysis, and 1 of vertigo. The loss of service from this class of diseases amounted to 342 days, the daily average of sick was .93, and the average length of treatment 26.30 days. Diseases of the eye were but 5 in number, 1 case each of amblyopia, cataract, and ulcus corneæ, and 2 of conjunctivitis. The number of sick-days was 116, and the average duration of the cases 23.2 days. There were 2 cases of ear affections, otorrhœa and surditas. Of the 24 cases of diseases of the respiratory organs, all were of bronchitis and catarrh, with the exception of 1 case of pleuritis. The ratio of admissions from these cases was 10.04 per M, the loss of service 408 days, and the average duration of the cases 17 days. The total of the diseases of the digestive organs was 36, a ratio per M of 15, very nearly the same as for last year, with the same general distribution. The genito-urinary system gave 11 cases, among which were 5 of gonorrhœa and 2 of stricture of the urethra. The ratio per M of this class was 4.58, and the loss of service 417 days. The average length of treatment of diseases was 37.90 days. There were 5 admissions for skin diseases and 4 for those resulting from violence.

The attending officer, Surgeon A. A. Hoehling, appends the following notes to his returns:

The most interesting subject which has presented itself in the duty on this station is that of malaria. No doubt many cases of disease in this city are unjustly attributed to this influence, but there is also the best proof that this mysterious agent largely influences the health of residents, and more particularly of sojourners. A very obstinate form of diarrhœa has not unfrequently come under my notice, which I believe to be malarial. It is benefited by arsenic and quinine, but has a marked tendency to return again and again. Malarial neuralgia is a very common form of disease, in fact one of the most common met with at this office. Malarial cachexia is very frequently seen here, and complicates many other affections. This form of the disease is sometimes attended with depression of spirits, apprehensiveness, inability to make continued mental effort, and with muscular pains and tonsillitis. Cases of typical intermittent fever are very rare, and among old residents I have seen but three such. No season is entirely free from malaria affections, which shows that bad plumbing and drainage are to blame, as well as the Kidwell Bottoms. Quinine does not always afford a relief, unless the patient can visit a healthful climate, and take the remedy there for a couple of weeks. The compound tincture of iodine alone, or in combination with Fowler's solution of

arsenite of potassium, has answered well in chronic cases, after the failure of quinine. This combination is used successfully in recent cases at the central dispensary.

Diseases are apt to assume the asthenic type, and among the residents a ruddy complexion is rare.

The connection between malarial surroundings and the production of septicæmia or chronic pyæmia has come to my knowledge in two cases. The first was in Philadelphia, where a chaplain had an attack of congestive malarial fever, attended by pneumonia, after exposure in a swampy region of Maryland. In a short time one leg began to swell and pain him intensely. Abscess of the knee and leg followed, from which he recovered, with a stiff knee, in one year. The other case occurred in the practice of this office. On October 24 I removed a stone about as large as an almond from the female bladder. A moderate incision upward was made into the urethra, through which the stone was removed. On the 27th of October, at night, violent pain occurred in the right knee, preceded by vomiting and rigors, which went on to abscess of the thigh and leg, finally ending fatally. The house in which this patient resided receives the breezes from the Potomac flats, and she had malarial fever a short time before the operation.

Children from the age of two months to two years do not bear the summer heat well, and ought to leave Washington early and remain away until October. Those who remain too long in town after the hot weather has set in are liable to cholera infantum and other bowel complaints, often rapidly fatal. However, it may be said that this city compares very favorably with our large cities of the North in respect to the prevalence of summer complaint.

In point of cleanliness, the city stands very high by comparison with other cities, although there is an occasional growl in the newspapers at dirty streets, which I should say is quite undeserved. The only uncleanliness here is involuntary, and is due to a deficient supply of water in the water-closets on second and third floors; this no doubt leads to disease at times. A fruitful cause of disease also exists in the almost general use of badly-trapped stationary washstands, in some cases discharging into the water-closet trap by an uninterrupted waste-pipe. In one bed-room so arranged I treated a case of diphtheria. Another case of this disease occurred in a room adjoining a wash-room with a stationary stand, which could only ventilate into the bed-room. Another case was met with in which the patient slept on a badly boarded ground floor, the air from the earth entering her room. A fourth case I could not trace to any local causes, though I believe the disease entered the house through the water-closet.

TABLE I.—*Showing the number remaining from last year, admitted, discharged, and continued, number of sick-days, average number of days under treatment, and daily average number of sick at the naval stations.*

Naval stations.	Remaining from last year.	Admitted.				
		First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total treated.
Navy-yard, Portsmouth, N. H	2	17	15	15	13	62
Navy-yard, Boston, Mass	3	24	43	47	30	147
Navy-yard, Brooklyn, N. Y	.....	5	4	4	3	16
Navy-yard, League Island, Pa	.....	27	34	59	34	154
Navy-yard, Washington, D. C	.....	16	10	25	22	73
Navy-yard, Norfolk, Va	.....	28	20	60	44	152
Navy-yard, Pensacola, Fla	.....	6	8	3	3	20
Navy-yard, Mare Island, Cal	4	41	38	21	27	131
Marine Barracks, New York, N. Y	3	77	97	86	104	367
Marine Barracks, Washington, D. C	.....	16	6	16	8	46
Torpedo station, Newport, R. I	.....	7	21	16	20	64
Naval station, New London, Conn	.....	2	2	2	3	9
Special duty, New York, N. Y	.....	10	7	1	5	23
Special duty, Philadelphia, Pa	.....	.....	.....	.....	4	4
Naval Academy, Annapolis, Md	11	233	252	63	375	934
Naval Dispensary, Washington, D. C	5	30	26	29	103	193
Special duty, Mare Island, Cal	.....	2	1	1	.....	4
Total	28	541	584	448	798	2,399

TABLE I.—*Showing the number remaining from last year, &c.*—Continued.

Naval stations.	Discharged.				Continued.	Total number of sick-days.	Average number of days under treatment.	Daily average number of sick.
	Cured.	Invalided.	Died.	Total.				
Navy-yard, Portsmouth, N. H	51	9	1	61	1	1,741	28.08	4.75
Navy-yard, Boston, Mass	97	44	1	142	5	760	5.17	2.07
Navy-yard, Brooklyn, N. Y	15	1	.....	16	.....	257	16.06	.70
Navy-yard, League Island, Pa	122	27	2	151	3	992	6.44	2.70
Navy-yard, Washington, D. C	44	27	.....	71	2	534	7.31	1.46
Navy-yard, Norfolk, Va	119	29	2	150	2	797	5.24	2.19
Navy-yard, Pensacola, Fla	19	.....	.....	19	1	294	14.7	.80
Navy-yard, Mare Island, Cal	115	15	1	131	.....	1,558	11.89	4.27
Marine Barracks, New York, N. Y	339	17	1	357	10	2,364	6.44	6.45
Marine Barracks, Washington, D. C	30	14	2	46	.....	431	9.36	1.17
Torpedo station, Newport, R. I	60	.....	.....	60	4	361	5.64	.98
Naval station, New London, Conn	8	.....	1	9	.....	103	11.44	.28
Special duty, New York, N. Y	17	2	2	21	2	395	17.17	1.07
Special duty, Philadelphia, Pa	2	.....	.....	2	2	223	55.75	.61
Naval Academy, Annapolis, Md	906	10	4	920	14	3,600	3.85	9.86
Naval Dispensary, Washington, D. C	181	.....	2	183	10	3,983	15.97	5.42
Special duty, Mare Island, Cal	4	.....	.....	4	.....	168	42	.46
Total	2,129	195	19	2,343	56	17,661	7.36	48.25

TABLE II.—*Showing the number of admissions, discharges, and deaths, number of sick-days, duration of treatment, and daily average number of sick at the naval stations.*

Diseases and injuries.	Number of cases.	Number of sick-days.	Average number of men sick daily.	Average number of days under treatment.	Number discharged to duty.	Number invalided.	Number died.	Number continued.
GENERAL DISEASES.								
1.—*Zymotic diseases.*								
Catarrhus epidemicus	6	36	.09	6	6	.....	.....	.....
Cynanche parotidea	2	27	.07	13.5	2	.....	.....	.....
Erysipelas	5	28	.07	5.6	4	.....	1	.....
Febricula	15	39	.10	2.6	15	.....	.....	.....
Febris continua simplex	3	12	.03	4	3	.....	.....	.....
Febris enterica	2	76	.20	38	1	.....	1	.....
Malaria cachexia, febris intermittens	326	1,828	5.01	5.46	292	31	1	2
Febris remittens	14	168	.45	12	12	2	.....	.....
Morbilli	2	29	.07	14.5	2	.....	.....	.....
Pertussis	1	26	.07	26	1	.....	.....	.....
Roseola	1	8	.02	8	1	.....	.....	.....
Vaccina	7	28	.07	4	7	.....	.....	.....
Total	384	2,315	6.33	6.03	346	33	3	2
2.—*Constitutional diseases.*								
Adynamia	30	528	1.44	17.6	23	3	1	3
Anæmia	3	20	.05	6.66	2	.....	1	.....
Hydrops	1	51	.13	51	.....	.....	.....	1
Podagra	9	316	.86	35.11	9	.....	.....	.....
Rheumatismus acutus	32	255	.69	7.96	23	4	.....	5
Rheumatismus chronicus	105	867	2.36	8.25	94	7	.....	4
Rheumatismus subacutus	2	13	.03	6.5	2	.....	.....	.....
Rheumatismus dorsalis	1	6	.01	6	1	.....	.....	.....
Senectus	1	92	.25	92	.....	.....	.....	1
Syphilis primitiva	23	324	.88	14.08	16	7	.....	.....
Syphilis consecutiva	25	562	1.53	22.48	17	8	.....	.....
Total	232	3,034	8.28	13.13	187	29	2	11

TABLE II.—*Showing the number of admissions, discharges, &c.*—Continued.

Diseases and injuries	Number of cases.	Number of sick-days.	Average number of men sick daily.	Average number of days under treatment.	Number discharged to duty.	Number invalided.	Number died.	Number continued.
LOCAL DISEASES.								
1.—*Diseases of the nervous system.*								
Apoplexia	1	1	.....	1	.....	.....	1	.....
Cepalalgia	169	252	.68	1.49	166	1	.....	2
Dementia	3	26	.07	8.66	1	2	.....	.....
Epilepsia	2	8	.02	4	1	1	.....	.....
Insolatio	4	7	.01	1.75	2	2	.....	.....
Irritatio spinalis	2	55	.15	27.5	.....	1	.....	1
Insomnia	3	22	.06	7.33	3	.....	.....	.....
Lypothymia	1	2	.....	2	1	.....	.....	.....
Mania	2	2	.....	1	.....	2	.....	.....
Myalgia	2	6	.01	3	2	.....	.....	.....
Nausea	4	5	.01	1.25	4	.....	.....	.....
Neurasthenia	1	3	.....	3	1	.....	.....	.....
Neuralgia	40	223	.60	5.57	37	1	.....	2
Nostalgia	1	1	.....	1	.....	1	.....	.....
Paralysis	6	330	.90	55	3	.....	2	1
Pleurodynia	6	28	.07	4.66	6	.....	.....	.....
Vertigo	1	11	.03	11	1	.....	.....	.....
Total	248	982	2.68	3.95	228	11	3	6
2.—*Diseases of the eye.*								
Amblyopia	1	6	.01	6	1	.....	.....	.....
Asthenopia	3	47	.12	15.66	1	2	.....	.....
Cataracta	1	88	.24	88	1	.....	.....	.....
Conjunctivitis	37	213	.58	5.75	36	1	.....	.....
Hordeolum	6	12	.03	2	6	.....	.....	.....
Iritis	3	28	.07	9.33	1	2	.....	.....
Myopia	1	21	.05	21	.....	1	.....	.....
Ophthalmia	2	5	.01	2.5	2	.....	.....	.....
Ophthalmia gonorrhœica	1	1	.....	1	.....	1	.....	.....
Ophthalmia tarsi	2	3	.....	1.5	2	.....	.....	.....
Pterygium	1	11	.03	11	1	.....	.....	.....
Retinitis	1	5	.01	5	1	.....	.....	.....
Ulcus corneæ	1	15	.04	15	1	.....	.....	.....
Total	60	455	1.24	7.58	53	7	.....	.....
3.—*Diseases of the ear*								
Otalgia	1	2	.....	2	1	.....	.....	.....
Otitis	5	62	.16	12.4	5	.....	.....	.....
Otorrhœa	1	34	.09	34	1	.....	.....	.....
Surditas	2	2	.....	1	2	.....	.....	.....
Total	9	100	.27	11.11	9	.....	.....	.....
4.—*Diseases of the teeth.*								
Odontalgia	28	43	.11	1.53	28	.....	.....	.....
5.—*Diseases of the circulatory system.*								
Aneurysma	1	1	.....	1	.....	1	.....	.....
Angina pectoris	1	6	.01	6	1	.....	.....	.....
Dilatatio cordis	1	1	.....	1	.....	.....	1	.....
Morbi valvularum cordis	2	52	.14	26	.....	1	1	.....
Palpitatio	7	24	.06	3.42	5	2	.....	.....
Pericarditis	1	3	.....	3	.....	1	.....	.....
Syncope	6	12	.03	2	6	.....	.....	.....
Varix	3	21	.05	7	1	1	.....	1
Total	22	120	.32	5.45	13	6	2	1
6.—*Diseases of the absorbent system.*								
Adenitis	13	257	.70	19.76	10	3	.....	.....

TABLE II.—*Showing the number of admissions, discharges, &c.*—Continued.

Diseases and injuries.	Number of cases.	Number of sick days.	Average number of cases sick daily.	Average number of days under treatment.	Number discharged to duty.	Number invalided.	Number died.	Number remaining.
7.—Diseases of the respiratory system.								
Asthma	9	36	.09	4	7	2	.....	.....
Bronchitis acute	44	498	1.34	11.29	35	5	.....	4
Bronchitis chronica	15	212	.57	14.77	13	4	.....	1
Catarrhus	232	1,076	2.93	4.63	225	.....	.....	7
Epistaxis	1	1	.....	1	1	.....	.....	.....
Hæmoptysis	6	123	.33	20.5	5	1	.....	.....
Laryngitis	3	47	.12	15.66	2	.....	.....	1
Phthisis pneumonica acuta	1	1	.....	1	.....	1	.....	.....
Phthisis pneumonica chronica	16	242	.66	15.12	7	8	1	.....
Pleuritis	8	105	.28	13.12	7	1	.....	.....
Pneumonia	19	192	.52	10.2	4	3	3	.....
Total	368	2,536	6.90	6.86	326	25	4	13
8.—Diseases of the digestive system.								
Ascites	1	35	.00	35	1	.....	.....	.....
Cholera morbus	47	210	.57	4.46	46	.....	.....	1
Colitis	2	25	.06	12.5	2	.....	.....	.....
Colica	51	114	.31	2.27	51	.....	.....	.....
Congestio hepatis	2	55	.15	27.5	2	.....	.....	.....
Constipatio	18	94	.25	5.22	14	3	.....	1
Diarrhœa acuta	188	605	1.65	3.21	182	6	.....	.....
Diarrhœa chronica	11	150	.40	13.63	10	1	.....	.....
Dysenteria acuta	13	89	.24	6.84	11	2	.....	.....
Dysenteria chronica	4	36	.09	9	4	.....	.....	.....
Dyspepsia	49	307	.83	6.26	46	2	.....	1
Enteritis	1	5	.01	5	.....	.....	1	.....
Fœtida ano	3	54	.14	18	1	2	.....	.....
Gastritis	1	15	.04	15	1	.....	.....	.....
Hæmatemesis	1	10	.02	10	1	.....	.....	.....
Hæmorrhoids	21	148	.40	7.31	16	4	.....	1
Hepatitis acuta	1	16	.04	16	1	.....	.....	.....
Hepatitis chronica	2	14	.03	7	1	1	.....	.....
Hernia	19	226	.61	11.89	13	6	.....	.....
Icterus	8	85	.23	10.62	5	3	.....	.....
Peritonitis	2	5	.01	2.5	.....	.....	2	.....
Pharyngitis	28	166	.45	5.92	28	.....	.....	.....
Tonsillitis	57	224	.61	3.92	55	2	.....	.....
Total	530	2,688	7.34	5.07	491	32	3	4
9.—Diseases of the genito-urinary system.								
Albuminuria	1	2	.....	2	.....	1	.....	.....
Balanitis	3	55	.15	18.33	1	1	.....	1
Calculus	1	13	.03	13	1	.....	.....	.....
Chancroides	5	21	.05	4.2	3	2	.....	.....
Cystitis	2	154	.42	77	2	.....	.....	.....
Catarrh vesicæ	1	38	.10	38	1	.....	.....	.....
Enuresis	3	15	.04	5	3	.....	.....	.....
Epididymitis	2	9	.02	4.5	2	.....	.....	.....
Gonorrhœa	60	574	1.56	9.56	43	17	.....	.....
Hydrocele	2	42	.11	21	2	.....	.....	.....
Ischuria	1	2	.....	2	1	.....	.....	.....
Nephritis	1	45	.12	45	1	.....	.....	.....
Orchitis	10	112	.30	11.2	8	1	.....	1
Paraphymosis	2	9	.02	4.5	1	1	.....	.....
Phymosis	1	20	.05	20	1	.....	.....	.....
Spermatorrhœa	1	41	.11	41	.....	1	.....	.....
Urethra strictura	10	294	.80	29.4	5	3	.....	2
Vesical irritability	1	2	.....	2	1	.....	.....	.....
Total	107	1,448	4.22	13.53	76	27	.....	4
10.—Diseases of the locomotive system.								
Arthritis	3	36	.09	12	3	.....	.....	.....
Synovitis	2	10	.02	5	2	.....	.....	.....
Total	5	46	.12	9.2	5	.....	.....	.....

TABLE II.—*Showing the number of admissions, discharges, &c.*—Continued.

Diseases and injuries.	Number of cases.	Number of sick days.	Average number of men sick daily.	Average number of days under treatment.	Number discharged to duty.	Number invalided.	Number died.	Number continued.
11.—*Diseases of the integumentary system.*								
Abscessus	29	266	.72	9.17	24	3	.....	2
Anthrax	9	155	.42	17.22	8	.....	.....	1
Clavus	3	5	.01	1.66	3	.....	.....	.....
Eczema	9	122	.33	13.55	6	2	.....	1
Erythema	2	23	.06	11.5	2	.....	.....	.....
Furunculus	40	210	.57	5.25	39	.....	.....	1
Herpes	4	32	.08	8	4	.....	.....	.....
Lupus non exedens	1	7	.01	7	1	.....	.....	.....
Onychia	1	17	.04	17	1	.....	.....	.....
Paronychia	4	58	.15	14.5	2	.....	.....	2
Scabies	1	25	.06	25	1	.....	.....	.....
Unguis involutis	4	13	.03	3.25	4	.....	.....	.....
Ulcus	10	227	.62	22.7	7	1	.....	2
Urticaria	2	4	.01	2	2	.....	.....	.....
Verrucæ	1	15	.04	15	1	.....	.....	.....
Total	118	1,179	3.21	11.69	105	6	.....	9
NON-MALIGNANT TUMORS AND CYSTS.								
Lipoma	1	7	.01	7	1	.....	.....	.....
Sarcoma	1	2	.....	2	1	.....	.....	.....
Total	2	9	.02	4.5	2	.....	.....	.....
POISONS.								
Alcoholismus	48	123	.33	2.56	41	7	.....	.....
Delirium tremens	2	5	.01	2.5	1	1	.....	.....
Ebriositas	1	1	.....	1	1	.....	.....	.....
Vulnus venenatum	1	4	.01	4	1	.....	.....	.....
Total	52	133	.36	2.55	44	8	.....	.....
VIOLENT DISEASES AND DEATHS.								
Abrasio	13	112	.30	8.61	12	.....	.....	1
Ambustio	6	108	.29	18	6	.....	.....	.....
Concussio cerebri	1	3	.....	3	1	.....	.....	.....
Contusio	61	486	1.32	7.96	61	.....	.....	.....
Fractura	7	515	1.40	73.57	6	1	.....	.....
Luxatio	7	266	.72	38	5	2	.....	.....
Stremma	70	428	1.16	6.11	67	2	.....	1
Submersio	1	1	.....	1	.....	.....	1	.....
Vulnus contusum	22	153	.41	6.95	19	2	1	.....
Vulnus incisum	18	135	.36	7.5	17	1	.....	.....
Vulnus laceratum	6	85	.23	14.16	6	.....	.....	.....
Vulnus punctum	5	18	.04	3.6	5	.....	.....	.....
Vulnus sclopetarium	2	12	.03	6	1	.....	.....	1
Total	219	2,322	6.34	10.60	206	8	2	3
Grand aggregate	2,399	17,661	48.25	7.36	2,129	195	19	56

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease and injury at the several naval stations.*

Vessels or stations	Navy-yard, Portsmouth, N. H.				Navy-yard, Boston, Mass.				Navy-yard, Brooklyn, N. Y.				Navy-yard, League Island, Pa.				Navy-yard, Washington, D. C.				Navy-yard, Norfolk, Va.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES.																								
1.—*Zymotic diseases.*																								
Erysipelas	2																							
Febris continua simplex	1												1											
Febris intermittens	1				9	1			1				61	8	1		23	11			51	9		
Febris remittens													2				4	1			5	1		
Total	4				9	1			1				64	8	1		28	12			56	10		
Ratio per M	1.66				3.75	.41			.41				26.67	3.33	.41		11.67	5.00			23.37	4.16		
Number of sick-days	23				33				10				366				292				247			
Average number sick daily	.06				.09				.02				1.				.79				.67			
Average number sick daily per M	.02				.03								.41				.32				.27			
Average duration of treatment	5.82				3.66				10				5.71				10.42				4.41			
2.—*Constitutional diseases.*																								
Adynamia					2	2											1							
Anæmia	1																							
Rheumatismus acutus	1				6	1	1		1								3	1						
Rheumatismus chronicus	1				5	3	1		3	1			2											
Syphilis primitiva	5				1								3	3			2	1			4			
Syphilis consecutiva	4		2		4		1														2	2		
																					3	3		
Total	12		2		18	6	3		4	1			5	3			6	2			9	5		

Ratio per M	5.		.83		7.50	2.50	1.25		1.66	.41			2.08	1.25			2.50	.83			3.75	2.08		
Number of sick-days	433				99				36				19				30				61			
Average number sick daily	1.18				.27				.09				.05				.08				.16			
Average number sick daily per M	.49				.09				.03				.02				.02				.06			
Average duration of treatment	36.08				5.5				9				3.8				5.				6.77			
LOCAL DISEASES.																								
1.—Diseases of the nervous system.																								
Apoplexia																					1			1
Cephalalgia					1								1											
Dementia					1	1																		
Epilepsia																					1			
Insolatio					1	1															1	1		
Irritatio spinalis																	1	1						
Mania																					2	2		
Neuralgia					2								5	1										
Nostalgia					1	1																		
Paralysis																	1							
Pleurodynia					1																			
Total					7	3							6	1			2	1			5	3		1
Ratio per M					2.91	1.25							2.50	.41			.83	.41			2.08	1.25		.41
Number of sick-days					27								31				2				2			
Average number sick daily					.07								.08											
Average number sick daily per M					.02								.03											
Average duration of treatment					3.85								5.16				1.				.4			
7.—Diseases of the eye.																								
Asthenopia					1		1																	
Conjunctivitis	2				1								2				1	1						
Hordeolum																	1							
Iritis					1	1																		
Myopia	1		1																					
Ophthalmia																					1			
Ophthalmia gonorrhœica					1	1																		
Total	3		1		4	2	1						2				2	1			1			
Ratio per M	1.25		.41		1.66	.83	.41						.83				.83	.41			.41			

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease and injury, &c.*—Continued.

Vessels or stations	Navy-yard, Portsmouth, N. H.				Navy-yard, Boston, Mass.				Navy-yard, Brooklyn, N. Y.				Navy-yard, League Island, Pa.				Navy-yard, Washington, D. C.				Navy-yard, Norfolk, Va.			
Diseases and injuries.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.	Cases.	Invalided.		Dead.
		To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.			To hospital.	From service.	
LOCAL DISEASES—Continued.																								
2.—*Diseases of the eye*—Continued.																								
Number of sick-days	51				22								6				2				4			
Average number sick daily	.13				.06								.01								.01			
Average number sick daily per M	.05				.02																			
Average duration of treatment	17.				5.5								3				1				4			
3.—*Diseases of the ear.*																								
Otitis					1																1			
Surditas													1											
Total					1								1								1			
Ratio per M					.41								.41								.41			
Number of sick-days													2								6			
Average number sick daily																					.01			
Average number sick daily per M																								
Average duration of treatment					1								2								6			

4.—Diseases of the teeth.																								
Odontalgia	1																							
Total	1																							
Ratio per M	.41																							
Number of sick-days	1																							
Average number sick daily																								
Average number sick daily per M																								
Average duration of treatment	1																							
5.—Diseases of the circulatory system.																								
Angina pectoris				1																				
Dilatio cordis											1			1										
Palpitatio	1		1	1																	1			
Pericarditis				1	1																			
Syncope											1													
Varix											2	1												
Ratio per M	.41		.41	1.25	.41						1.66	.41		.41							.41			
Number of sick-days	2			19							18										2			
Average number sick daily				.05							.04													
Average number sick daily per M				.02							.01													
Average duration of treatment	2			6.33							4.5										2			
6.—Diseases of the absorbent system.																								
Adenitis	1			1											4	3								
Ratio per M	.41			.41											1.66	1.25								
Number of sick-days	30			31											29									
Average number sick daily	.08			.08											.07									
Average number sick daily per M	.03			.03											.02									
Average duration of treatment	30.			31.											7.25									

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease and injury, &c.*—Continued.

Vessels or stations	Navy-yard, Portsmouth, N. H.				Navy-yard, Boston, Mass.				Navy-yard, Brooklyn, N. Y.				Navy-yard, League Island, Pa.				Navy-yard, Washington, D. C.				Navy-yard, Norfolk, Va.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																								
7.—*Diseases of the respiratory system.*																								
Asthma													1	1							1			
Bronchitis acuta	2				28	4							8				2				3			
Bronchitis chronica									1				4	1							2	1		
Catarrhus					1				2				1								2			
Haemoptysis					1	1											1							
Laryngitis													1											
Phthisis pneum. acut																	1	1						
Phthisis pneum. chron	1		1																		2	2		
Pleuritis	1				1												1							
Pneumonia	1				2	1		1					1			1					1	1		
Total	5		1		33	6		1	3				16	2		1	5	1			11	4		
Ratio per M	2.08		.41		13.74	2.50		.41	1.25				6.66	.83		.41	2.08	1			4.58	1.66		
Number of sick-days	155				144				26				162				32				67			
Average number sick daily	.42				.39				.07				.44				.08				.18			
Average number sick daily per M	17				.16				.02				.18				.03				.07			
Average duration of treatment	31.				4.36				8.66				10.12				6.4				6.09			
8.—*Diseases of the digestive system.*																								
Cholera morbus					10				1				1								3			
Colica					1								2								2			

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TABLE III.—*Showing the number of cases, the invalided and dead, for each disease and injury, &c.*—Continued.

Vessels or stations	Navy-yard, Portsmouth, N. H.				Navy-yard, Boston, Mass.				Navy-yard, Brooklyn, N. Y.				Navy-yard, League Island, Pa.				Navy-yard, Washington, D. C.				Navy-yard, Norfolk, Va.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																								
10.—*Diseases of the locomotive system.*																								
Arthritis													1											
Synovitis													2											
Total													3											
Ratio per M													1.25											
Number of sick-days													12											
Average number sick daily													.03											
Average number sick daily per M													.01											
Average duration of treatment													4											
11.—*Diseases of the integumentary system.*																								
Abscessus					4				1				2	1			1				3			
Anthrax																	1							
Eczema	1								3				2	2										
Erythema																	1							
Furunculus	1				1								2								4			
Onychia																					1			
Paronychia													1											
Ulcus	1												3								1			
Urticaria																								
Total	3				5				4				10	3			3				11			

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TABLE III.—*Showing the number of cases, the invalided and dead, for each disease and injury, &c.,*—Continued.

Vessels or stations	Navy-yard, Portsmouth, N. H.				Navy-yard, Boston, Mass.				Navy-yard, Brooklyn, N. Y.				Navy-yard, League Island, Pa.				Navy-yard, Washington, D. C.				Navy-yard, Norfolk, Va.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
VIOLENT DISEASES AND DEATHS—Cont'd.																								
Average duration of treatment	36.35	....	.....	....	5.53	.....	.....	....	68	.....	....	....	6.5	.....	....	....	5.5	.....	....	....	5.88	.....	....	....
Grand aggregate	62	..	9	1	147	39	5	1	16	.1	....	....	154	26	1	2	73	27	....	....	152	29	....	2
Ratio per M	25.84	...	3.75	.41	61.27	16.25	2.08	.41	6.66	.41	..	....	64.19	10.83	.41	.83	30.42	11.24	....	....	63.35	12.07	....	.83
Number of sick-days	1,741	....	.....	....	760	.....	.....	..	257	.....	....	....	902	.....	....	....	534	.....	....	...	797	.....	....	....
Average number sick daily	.27	....	.....	....	.12	....	.....	....	.04	.....	...	....	.15	.....	....	....	.08	.....	..	....	.12	.....	..	....
Average number sick daily per M	.11	....	.....	....	.05	.....	.....	....	.01	....		....	.06	.....	....	....	.03	.....	....	....	.05	.....	..	....
Average duration of treatment	28.08	....	....	....	5.17	.....	.....	....	16.06	.....	....	....	6.44	.....	....	....	7.31	.....	..	...	5.11	.....	..	....

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease and injury, at the several naval stations.*

Vessels or stations	Navy-yard, Pensacola, Fla.				Navy-yard, Mare Island, Cal.				Marine barracks, New York, N. Y.				Marine barracks, Washington, D. C.				Torpedo station, Newport, R. I.				Naval station, New London, Conn.			
	Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.			
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES.																								
1.—*Zymotic diseases.*																								
Catarrhus epidemicus																					1			
Cynanche parotidea					2																			
Erysipelas					2																			
Febris intermittens	2				3				26				9				1				1			
Febris remittens	1																							
Vaccina									7															
Total	3				6				33				9				1				2			
Ratio per M	1.25				2.50				13.78				3.75				.41				.83			
Number of sick-days	17				49				132				74				6				10			
Average number sick daily	.04				.13				.36				.20				.01				.02			
Average number sick daily per M	.01				.05				.10				.08											
Average duration of treatment	5.7				8.16				4.				8.22				6				5			
2.—*Constitutional diseases.*																								
Adynamia													4		1	1	1							
Anæmia													1			1								
Hydrops	1																							
Rheumatismus acutus	2				2				3								5							
Rheumatismus chronicus					10				30								6							
Rheumatismus subacutus																					2			
Rheumatismus dorsalis																					1			

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease and injury, &c.*—Continued.

Vessels or stations	Navy-yard, Pensacola, Fla.				Navy-yard, Mare Island, Cal.				Marine barracks, New York, N. Y.				Marine barracks, Washington, D. C.				Torpedo station, Newport, R. I.				Naval station, New London, Conn.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES—Continued.																								
2.—*Constitutional diseases*—Continued.																								
Syphilis primitiva					1		1		8															
Syphilis consecutiva					1	1			8	1			1											
Total	3				14	1	1		49	1			6		1	2	12				3			
Ratio per M	1.25				5.83	.41	.41		20.42	.41			2.50		.41	.83	5.				1.25			
Number of sick-days	60				169				436				73				108				19			
Average number sick daily	.16				.46				1.19				.19				.29				.05			
Average number sick daily per M	.06				.19				.49				.07				12				.02			
Average duration of treatment	20.				12.07				8.89				12.16				9				6.33			
LOCAL DISEASES.																								
1.—*Diseases of the nervous system.*																								
Cephalalgia									1				2		1		2							
Dementia					2		1																	
Epilepsia													1		1									
Insolatio									2															
Neuralgia	1				2				4				1				2							
Paralysis									1															
Pleurodynia									4								1							
Total	1				4		1		12				4		2		5							

| | | |

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease, &c.*—Continued.

Vessels or stations	Navy-yard, Pensacola, Fla.				Navy-yard, Mare Island, Cal.				Marine barracks, Brooklyn, N. Y.				Marine barracks, Washington, D. C.				Torpedo station, Newport, R. I.				Naval station, New London, Conn.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																								
5.—*Diseases of the circulatory system*—Continued.																								
Ratio per M					.41	.41			3.33	.83											.83			.41
Number of sick-days					1				22												53			
Average number sick daily									.06												.14			
Average number sick daily per M									.02												.05			
Average duration of treatment					1				2.75												26.5			
6.—*Diseases of the absorbent system.*																								
Adenitis					1				4															
Ratio per M					.41				1.66															
Number of sick-days					20				138															
Average number sick daily					.05				.37															
Average number sick daily per M					.02				.15															
Average duration of treatment					20				34.5															
7.—*Diseases of the respiratory system.*																								
Asthma					2	1			5															
Bronchitis acute									9				1	1			3							

| | | |

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease, &c.*—Continued.

Vessels or stations	Navy-yard, Pensacola, Fla.				Navy-yard, Mare Island, Cal.				Marine barracks, Brooklyn, N. Y.				Marine barracks, Washington, D. C.				Torpedo station, Newport, R. I.				Naval station, New London, Conn.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																								
9.—Diseases of the genito-urinary system.																								
Balanitis					1		1		2															
Calculus					1																			
Enuresis									1								1							
Gonorrhœa					4				11				5	3										
Hydrocele					1																			
Ischura																	1							
Nephritis					1																			
Orchitis									3															
Paraphymosis	1																							
Spermatorrhœa					1		1																	
Urethræ structura									4	2														
Total	1				9		2		21	2			5	3			2							
Ratio per M	.41				3.75		.83		8.75	.83			2.08	1.25			.83							
Number of sick-days	8				198				303				27				6							
Average number sick daily	.2				.54				.82				.07				.01							
Average number sick daily per M					.22				.34				.2											
Average duration of treatment	8.				22.				14.42				5.4				3							
10.—Diseases of the locomotive system.																								
Synovitis					2																			

Ratio per M				.83																				
Number of sick-days				.34																				
Average number sick daily				.09																				
Average number sick daily per M				.03																				
Average duration of treatment				17																				
11.—*Diseases of the integumentary system.*																								
Abscessus								5	1					1										
Anthrax				3				2																
Eczema	1							1																
Erythema																								
Furunculus	1			2				3						5										
Herpes								1																
Paronychia								1																
Scabies				1																				
Unguis involutis				1								2												
Ulcus								1				1	1											
Verruca				1																				
Total	2			8				14	1			3	1	6										
Ratio per M	.83			3.33				5.83	.41			1.25	.41	2.50										
Number of sick-days	18			116				113				6		151										
Average number of sick daily	.04			.31				.30				.01		.40										
Average number of sick daily per M	.01			.12				.12						16										
Average duration of treatment	9.			14.5				8.14				2		25.16										
Non-malignant tumors and cysts.																								
Lipoma								1																
Sarcoma								1																
Total								2																
Ratio per M								.83																
Number of sick-days								9																
Average number sick daily								.02																
Average number sick daily per M																								
Average duration of treatment								4.5																

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease, &c.*—Continued.

Vessels or stations	Navy-yard, Pensacola, Fla.				Navy-yard, Mare Island, Cal.				Marine barracks, Brooklyn, N. Y.				Marine barracks, Washington, D. C.				Torpedo station, Newport, R. I.				Naval station, New London, Conn.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
POISONS.																								
Alcoholismus					7	3			15	1	1													
Delerium tremens									1															
Total					7	3			16	1	1													
Ratio per M					2.91	1.25			6.66	.41	.41													
Number of sick-days					19				45															
Average number sick daily					05				12															
Average number sick daily per M					02				05															
Average duration of treatment					2.71				2.81															
VIOLENT DISEASES AND DEATHS.																								
Abrasio									1															
Ambustio					1				1															
Concussio cerebri																								
Contusio					5				3								1							
Fractura	1																1							
Luxatio	1																							
Stremma					2				21								4							
Submersio									1			1												
Vulnus contusum					2				5				2		1		3							
Vulnus incisum	1				1				1				1											
Vulnus laceratum					4																			

| | | |

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease and injury, at the several naval stations.*

Vessels or stations	Special duty, New York, N. Y.				Special duty, Philadelphia, Pa.				Naval Academy, Annapolis, Md.				Naval Dispensary, Washington, D. C.				Special duty, Mare Island, Cal.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES.																								
1.—*Zymotic diseases.*																								
Catarrhus epidemicus													5								6			
Cynanche parotidea																					2			
Erysipelas									1			1									5			1
Febricula									15												15			
Febris continua simplex																					3			
Febris enterica									2			1									2			1
Febris intermittens	8		1						71	1		2	18								284	30	1	1
Febris remittens									2				42								56	2		
Morbilli									1				1								2			
Pertussis									1												1			
Roscola													1								1			
Vaccina																					7			
Total	8		1						93	1		2	67								384	32	1	3
Ratio per M	3.33		.41						38.76	.41		.83	27.92								160.06	13.33	.41	1.25
Number of sick-days	139								406				513								2,317			
Average number sick daily	.39								1.10				1.40								.37			
Average number sick daily per M	.12								.45				.58								.15			
Average duration of treatment	17.37								4.36				7.65								6.			
2.—*Constitutional diseases.*																								
Adynamia	3								11				8								30	2	1	1
Anæmia									1												3			1

Hydrops																					1				
Podagra					1			4				3				1					9				
Rheumatismus acutus	1	1						7				1									32	3	1		
Rheumatismus chronicus	3							30	2			11									105	6	1		
Rheumatismus subacute																					2				
Rheumatismus dorsalis																					1				
Senectus					1																1				
Syphilis primitiva								1													23	6	1		
Syphilis consecutiva								2				2									25	5	3		
Total	7	1			2			56	2			25				1					232	22	7	2	
Ratio per M	2.91	.41			.83			23.34	.83			10.42				.41					96.70	9.17	2.91	.83	
Number of sick-days	171				99			441				680				100					3,034				
Average number sick daily	.46				.27			1.20				1.85				.27					.48				
Average number sick daily per M	.19				.11			.50				.77				.11					.20				
Average duration of treatment	24.42				49.5			7.87				27.2				100					13.07				
LOCAL DISEASES.																									
1.—*Diseases of the nervous system.*																									
Apoplexia																					1				1
Cephalalgia								162													169		1		
Dementia																					3	1	1		
Epilepsia																					2		1		
Insolatio																					4	2			
Irritatio spinalis												1									2	1			
Insomnia												3									3				
Lypothymia								1													1				
Mania																					2	2			
Myalgia								2													2				
Nausea								4													4				
Neurasthenia								1													1				
Neuralgia								17				5				1					40	1			
Nostalgia																					1	1			
Paralysis					1							3			2						6				2
Pleurodynia																					6				
Vertigo												1									1				
Total					1			187				13			2	1					248	8	3	3	
Ratio per M					.41			77.94				5.41			.83	.41					103.37	3.33	1.25	1.25	
Number of sick-days					92			326				342				2					982				
Average number sick daily					.25			.89				.93									.15				

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease and injury, &c.*—Continued.

Vessels or stations	Special duty, New York, N. Y.				Special duty, Philadelphia, Pa.				Naval Academy, Annapolis, Md.				Naval Dispensary, Washington, D. C.			Special duty, Mare Island, Cal.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.			Invalided.					Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																								
1.—*Diseases of the nervous system*—Continued.																								
Average number sick daily per M					.10				.37				.38								0.6			
Average duration of treatment					92				1.74				26.30				2				3.96			
2.—*Diseases of the eye.*																								
Amblyopia													1								1			
Asthenopia									2		1										3		2	
Cataracta													1								1			
Conjunctivitis									24				2								37	1		
Hordeolum									4												6			
Iritis																					3	2		
Myopia																					1		1	
Ophthalmia									1												2			
Ophthalmia gonorrhœica																					1	1		
Ophthalmia tarsi									2												2			
Pterygium																					1			
Retinitis																					1			
Ulcus corneæ													1								1			
Total									33		1		5								60	4	3	
Ratio per M									13.74		.41		2.08								25.01	1.66	1.25	
Average number of sick-days									173				116								455			
Average number sick daily									.47				.31								.07			

| | | |

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease, &c.*—Continued.

Vessels or stations	Special duty, New York, N. Y.				Special duty, Philadelphia, Pa.				Naval Academy, Annapolis, Md.				Naval Dispensary, Washington, D. C.				Special duty, Mare Island, Cal.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																								
5.—*Diseases of the circulatory system*—Continued.																								
Number of sick-days									3												120			
Average number sick daily																					.01			
Average number sick daily per M																								
Average duration of treatment									1.5												545			
6.—*Diseases of the absorbent system.*																								
Adenitis									2												13	3		
Ratio per M									.83												5.33	1.25		
Number of sick-days									14												262			
Average number sick daily									.03												.04			
Average number sick daily per M									.01												.01			
Average duration of treatment									2.8												16.37			
7.—*Diseases of the respiratory system.*																								
Asthma																					6			
Bronchitis acuta	1								10				4								25	2		
Bronchitis chronica									1				1								2			
Catarrhus	2								139				15								158			

Epistaxis																				1				
Hæmoptysis								2												6	1			
Laryngitis	2																			3				
Phthisis pneum. acuta																				1	1			
Phthisis pneum. chronica								6		1										16	5	3	1	
Pleuritis				1				1				1								3	1			
Pneumonia								1			1									10	3			3
Total	4			1				154		1	1	24								30.8	22	3	4	
Ratio per M	1.66			.41				64.19		.41	.41	10.04								153.39	9.17	1.25	1.66	
Number of sick-days	48			32				575				4.08								2,528				
Average number sick daily	.13			.08				1.57				1.11								.40				
Average number sick daily per M	.05			.03				.65				.46								.16				
Average duration of treatment	12.			32				3.73				17.								6.86				
8.—Diseases of the digestive system.																								
Ascites												1								1				
Cholera morbus								5												47				
Colitis												2								2				
Colica								39												51				
Congestio hepatis																				2				
Constipatio								6				1								18	3			
Diarrhœa acuta								95				7								188	5	1		
Diarrhœa chronica												5								11	1			
Dysenteria acuta												2								13	2			
Dysenteria chronica																				4				
Dyspepsia								27	1			3				1				49	2			
Enteritis																				1				1
Fistula in ano												1								3	2			
Gastritis																				1				
Hæmatemesis								1												1				
Hæmorrhois								6	2			3								21	4			
Hepatitis acuta												1								1				
Hepatitis chronica																				2	1			
Hernia	1							2		1		1								19	3	3		
Icterus								1												8	3			
Peritonitis	1			1				1			1									2				2
Pharyngitis								21				5								28				
Tonsilitis								20				4								57	2			
Total	2			1				224	3	1	1	36				1				530	28	4	3	
Ratio per M	.83			.41				93.37	1.25	.41	.41	15.06				.41				220.92	11.67	1.66	1.25	
Number of sick-days	11							617				427				60				2,688				

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease, &c.*—Continued.

Vessels or stations.	Special duty, New York, N. Y.				Special duty, Philadelphia, Pa.				Naval Academy, Annapolis, Md.				Naval Dispensary, Washington, D. C.				Special duty, Mare Island, Cal.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																								
8.—*Diseases of the digestive system*—Continued.																								
Average number sick daily	.03								1.68				1.16				.16				.43			
Average number sick daily per M	.01								.70				.48				.06				.17			
Average duration of treatment	5.5								2.75				11.86				.60				5.07			
9.—*Diseases of the genito-urinary system.*																								
Albuminuria									1	1											1	1		
Balanitis																					3		1	
Calculus																					1			
Chancroides									1												5	2		
Cystitis													3								3			
Catarrhus vesicæ									1												1			
Enuresis																					3			
Epididymitis									2												2			
Gonorrhœa									5				5								60	17		
Hydrocele													1								2			
Ischuria																					1			
Nephritis																					1			
Orchitis									2												10	1		
Paraphymosis																					2	1		
Phymosis									1												1			
Spermatorrhœa																					1		1	
Urethræ strictura									1				2								10	3		
Total									14	1			11								107	25	2	

Ratio per M									5.83	.41			4.58									44.60	10.42	.83	
Number of sick-days									163				417									1448			
Average number sick daily									.44				1.14									.23			
Average number sick daily per M									.18				.47									.09			
Average duration of treatment									11.64				37.90									13.53			
10.—*Diseases of the locomotive system.*																									
Arthritis																						3			
Synovitis																						2			
Total																						5			
Ratio per M																						2.08			
Number of sick-days																						46			
Average number sick daily																									
Average number sick daily per M																									
Average duration of treatment																						9.2			
11.—*Diseases of the integumentary system.*																									
Abscesses	1	1							10				1									29	3		
Anthrax													3									9			
Clavus									3													3			
Eczema									1													9	2		
Erythema									1													2			
Furunculus									21													40			
Herpes									3													4			
Lupus non exedens													1									1			
Onychia																						1			
Paronychia									2													4			
Scabies																						1			
Unguis involutus									1													4			
Ulcus									3													10	1		
Urticaria																						2			
Verrucæ																						1			
Total	1	1							45				5									120	6		
Ratio per M	.41	.41							17.50				2.08									48.77	2.50		
Number of sick-days	8								2.46				110									1,174			

TABLE III.—*Showing the number of cases, the invalided and dead, for each disease, &c.*—Continued.

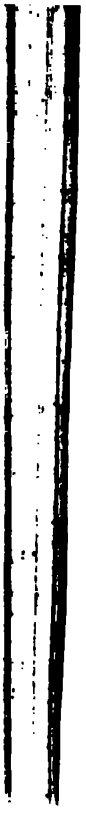
Vessels or stations.	Special duty, New York, N. Y.				Special duty, Philadelphia, Pa.				Naval Academy, Annapolis, Md.				Naval dispensary, Washington, D. C.				Special duty, Mare Island, Cal.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																								
11.—*Diseases of the integumentary system*—Continued.																								
Average number sick daily	.02								.67				.30								.18			
Average number sick daily per M									.27				.12								.07			
Average duration of treatment	8								5.85				22.								10.03			
Non-malignant tumors and cysts.																								
Lipoma																					1			
Sarcoma																					1			
Total																					2			
Ratio per M																					.83			
Number of sick-days																					9			
Average number sick daily																								
Average number sick daily per M																								
Average duration of treatment																								
POISONS.																								
Alcoholismus									9				1								48	6	1	
Delirium tremens																					2	1		
Ebriositas									1												1			
Vulnus venenatum									1												1			
Total									11				1								52	7	1	

Ratio per M								4.58				.41							21.67	2.91	.41	
Number of sick-days								18				4							133			
Average number sick daily								.04				.01							.02			
Average number sick daily per M								.01														
Average duration of treatment								1.63				4							2.55			
VIOLENT DISEASES AND DEATHS.																						
Abrasio								9											13			
Ambustio								2											6			
Concussio cerebri								1											1			
Contusio								31											61			
Fractura								2											7		1	
Luxatio												1							7	2		
Stremma								27				3				1			70	1	1	
Submersio																			1			1
Vulnus contusum								3											22	2		1
Vulnus incisum								6											18	1		
Vulnus laceratum								1											6			
Vulnus punctum								2											5			
Vulnus sclopetarium																			2			
Total								84				4				1			219	6	2	2
Ratio per M								35.01				1.66				.41			91.28	2.50	.83	.83
Number of sick-days								540				32				6			2,322			
Average number sick daily								1.47				.08				.01			.37			
Average number sick daily per M								.61				.03							.15			
Average duration of treatment								6.42				8				6			10.60			
Grand aggregate	23	2		2	4			934	7	3	11	193			2	4			2,399	168	27	19
Ratio per M	9.58	.83		.83	1.66			389.32	2.91	1.25	4.57	80.45			.83	1.66			10.00	70.02	11.24	7.91
Number of sick-days	395				223			3,600				3,083				168			17,661			
Average number sick daily	.06				.03			.57				.49				.02			2.83			
Average number sick daily per M	.01				.01			.23				.20							1.17			
Average duration of treatment	17.17				55.75			3.85				15.97				42.			7.36			

SANITARY CONDITION

OF

NAVAL HOSPITALS.



NAVAL HOSPITALS.

The total number of cases treated at the naval hospitals during the year was 1,236, being 88 less than during the previous year; a reduction of 66.46 per M. The total loss of service was 79,151 days, an increase of 2,108 over that of 1879. The average duration of treatment was therefore greater, being 64.03 days; while for the preceding year it was 58.18. The daily average of patients was also greater, viz, 216.15; while in 1879 it was 211.07. The change in the ratios of the various classes of disease was as follows: In the zymotic diseases there was a diminution of 4, or 3.02 per M; constitutional diseases, a diminution of 56, or 42.3 per M; nervous diseases, an increase of 5, or 3.76 per M; of diseases of the eye, a reduction of 3, or 2.26 per M; of the circulatory system, an increase of 10, or 7.55 per M; respiratory system, a reduction of 42, or 31.72 per M; digestive system, an increase of 41, or 30.96 per M; genito-urinary system, an increase of 11, or 8.31 per M; integumentary system, a reduction of 17, or 12.84 per M; in diseases from poisons, an increase of 3, or 2.26 per M; and in violent diseases and deaths, an increase of 30, or 22.65 per M. It will thus be seen that the increase was in the classes of diseases of the nervous and genito-urinary systems and in the violent diseases; while the reductions were in affections of the zymotic, constitutional, ocular, and integumentary classes.

NAVAL HOSPITAL, CHELSEA, MASS.

There were treated in this institution 115 cases, a ratio of 93.04 per M, and a reduction from last year of 45 cases. Of the aggregate, 67 were returned to duty cured; 38 were invalided from the service; 2 died; and 8 were continued to the following year. The total number of sick-days, amounted to 6,803; the daily average number of patients was 18.58, and the average duration of treatment 59.15 days. In the zymotia class there were but 3 cases—1 each of erysipelas, febris enterica, and febris intermittens; giving a ratio of 2.34 per M, and a loss of service of 132 days. This class was represented last year by a total of 5 cases of intermittent fever. There were reported 31 cases in the class of constitutional affections, a falling off of 14 from last year. Of the number returned, 14 were of rheumatism, 9 of syphilis, 7 of adynamia, and 1 of tuberculosis. The total of the class gives a ratio of 4.36 per M, and a loss of service of 1,976 days. Of diseases of the nervous system, there was an aggregate of 9 cases, a ratio of 7.27 per M. The average duration of treatment was 62.66 days, giving an aggregate loss of 564 days' service. The reduction in this class from the number of last year was 6, or 4.74 per M. The cases during 1880 included 1 each of dementia, epilepsy, sunstroke, melancholy, nostalgia, and paralysis, and 3 of neuralgia. The ocular diseases treated were conjunctivitis, 2; iritis, 1; ophthalmia, 1; and retinitis, 1; total, 5; equaling that of last year, with a ratio per M of 3.94, and a loss of service of 293 days. The circulatory system gave but 3 cases, 2 less than in 1879, of which there were 2 of valvular disease of the heart, and 1 of pericorditis. The ratio was

2.34 per M, and the number of sick-days 60. The respiratory system gave 20 cases, a ratio per M of 16.18, and causing a loss of service of 1,340 days. Of the total, 2 were cases of asthma, 7 of bronchial and catarrhal affections, 3 of phthisis, and 5 of pneumonia; 1 of the latter died, and 6 of the class were invalided. The aggregate of the class was 6 less than in 1879. There were 12 cases returned in the class of diseases of the digestive system, an increase of 3 over last year, with a ratio of 9.70 per M, and a loss of 716 days; 3 of the cases were of diarrhœa, and 4 of hernia. The genito-urinary class gave a total of 18 cases, 17 of which were gonorrhœa and its sequel, orchitis. The ratio per M was 14.56, and the loss of service 768 days; and the aggregate was 5 less than for the previous year. Of the diseases of the locomotive system, there were reported 2 cases of periostitis, a ratio of 1.61 per M, the duration of each case having been 37 days. There were 3 cases of integumentary diseases, 2 of ulcer, and 1 of abscess; from which there were 196 days lost to the service. Of violent diseases, there were 2 cases each of contusion and fracture, and 1 each of contused wound and sprain; a total of 6, with a ratio per M of 4.74. The number of sick-days was 507, giving an average of treatment of 84.5 days. The falling off from the number in this class for 1879 was marked, 28 having been reported for that year.

NAVAL HOSPITAL, BROOKLYN, N. Y.

There were 296 cases under treatment at this establishment during the year, a falling off of 60 from the preceding year, or a ratio per M of 45.77. Of this aggregate 150 were cured, 80 were invalided, 17 died, and 49 were continued. The total number of sick-days was 16,374, giving a daily average of 44.73; and the average duration of treatment was 55.31 days. There were 22 admissions in the class of zymotic affections, a ratio of 17.19 per M. The loss of service from this class was 808 days, and the average duration 36.72 days. The principal factors of the list were 14 cases of malarious fevers, 1 of which died, 4 of scarlet fever, and 1 of typhoid fever. These figures differ but slightly from those of 1879. There were recorded in the class of constitutional affections 78 cases, or 63.10 per M, a reduction of 15 cases from the number of last year. The loss of service from the diseases of this class was 4,505 days. The principal factors were adynamia, 14 cases; diabetes, 2 cases; rheumatism, 31 cases; and syphilis, 28 cases; 3 deaths occurred, 2 from adynamia and 2 from rheumatism. Nervous diseases gave 20 cases, or a ratio of 16.18 per M, with a loss of 1,060 days' service; 9 of these were invalided from the service; 7 of the cases were neuralgic in character, 3 were of dementia, 5 of epilepsy, and 2 of paralysis. The total of this class was the same as for 1879. Diseases of the eye gave 8 cases (1 more than last year), a ratio per M of 6.47, with 331 sick-days. There were 2 cases each of conjunctivitis and iritis, and 1 each of amaurosis, keratitis, ophthalmia, and pterygium. Five cases of affections of the ear were received, 2 each of otitis and surditas, and 1 of otorrhœa. The ratio per M was 3.94. This class was unrepresented in 1879. Diseases of the circulatory organs yielded 10 cases, the same number as in 1879. The ratio per M of these cases was 8.09 and the number of sick-days 530. The principal affections making the class were valvular diseases, of which there were 4 cases, and palpitation, which gave 4 cases; 1 of the former died, as did 1 case of aneurism; 3 of the class were invalided from the service. Fifty-four cases of affections of the respiratory system were returned, making a ratio of 43.68 per M. This total is 8 less than for 1879. There

were 18 catarrhal and bronchial cases, 15 of phthisis pneumonica, 2 of which died, 10 of pleurisy, and 6 of pneumonia. The relative proportions of the 2 last factors were very nearly reversed in the years of 1879 and 1880, and the mortality from pneumonia for the latter year was 3, or 50 per cent. Diseases of the digestive system were 24 in number, 11 more than in 1879. This aggregate gave a ratio of 19.41 per M, and a loss of 827 days' service; 2 deaths occurred in this class, 1 from gastritis and 1 from peritonitis; 28 cases of affections of the genito-urinary organs were received, of which 13 were of gonorrhœa, 5 of urethræ strictura, and 2 each of the following: albuminuria (1 of which died), enuresis, cystitis, nephritis, orchitis. The ratio per M given was 22.65, and the number of sick days 1,244. The aggregate of the class was 13 less than for the year 1879. There were returned 2 cases of affections of the locomotor system; 7 of the integumentary system (one-half the number in 1879), and 4 of alcoholic poisoning; 22 cases of diseases from violence were received, 1 of which—a case of fracture—terminated fatally. The number of sick-days in this class was 1,174, and the ratio per M, 17.19. The aggregate of the class was less than half that (47) for the year 1879, the falling off being principally in the number of fractures and dislocations.

Medical Inspector D. Bloodgood makes the following interesting summary:

In the matter of climatology, the winter of 1879-'80 was unusually bland and temperate, and was succeeded by a spring, summer, and autumn remarkable for abrupt changes and extreme and prostrating heats, and by a winter, so far, changeful and severe; but through it all, and though the hospital is environed by marshes, large areas filled with dredgings, the stagnant Wallabout basin, an offal dock, numerous factories emitting their various stenches, an impoverished and debased vicinage, yet no endemic or epidemic calamities have resulted; and, adverse to the reputed insalubrity of this site, it is a fact that among the divers inmates, patients, employés, officers, families, young children, not in a single instance has fever, or other malady attributed to "malaria," been known to originate, nor has it been noticed that the progress of any case under treatment was modified by local malarious influence. But still, though disease has not been engendered, great inconvenience and discomfort was experienced during the heated term in consequence of the effluvia from the surrounding nuisances.

An important sanitary operation, the filling in of the extensive mud-flats, which bound the hospital on the west, is steadily progressing. The work was commenced over a year since, and is effected without cost by permitting builders and others to use the morass as a "free dump" for earth, stones, and cleanly rubbish. When reclaimed this considerable tract, useless to government for other purpose, would prove a valuable extension to the hospital grounds.

Such ordinary sanitary improvements have been conducted as the overhauling and extending drains and sewerage; filling in old cisterns and pools; removing decayed materials; the renovating of all buildings; culture of the grounds; and the planting of many trees to serve as barriers and absorbents.

There have been under treatment a daily average of 44$\frac{1}{3}\frac{1}{7}\frac{3}{5}$, or 16,390 sick-days for the year, with a mortality of 17.

The noticeable surgical cases have been:

1. Adenitis; syphilitic—large epitrochlear abscess, right elbow; free incisions and drainage established. Recovery complete.

2. Adenitis; syphilitic—the remains of inguinal glands, right side, dissected out. Cavity healed and filled up favorably.

3. Adenitis and synoritis—while buboes in both groins were suppurating, an enormous abscess formed in left knee-joint; aspiration not proving satisfactory, semicircular incisions, 5 inches in length, were made on either side of joint, and drainage tube passed through. Sixty days subsequently patient was sent to duty with no material impairment of the functions of the joint.

4. Gummata; occupying interior and anterior portions of right arm, extending from condyle half-way to axilla; incisions were followed by discharge of pus and detritus of tumors and muscle; numerous sinuses formed and were slit up, and the undermined edges cut away, and morbid tissues strangulated by silver-wire ligatures. Not until after patient had taken 300 grains of iodide of potassa per diem for three weeks did substantial improvement commence. From date of incision of tumor till healing of ulcers were 147 days.

7. Epithelioma: had existed seven years: tubercular swelling involved entire lower border lip, and was crowned by a depressed irregular ulcer and fissure. Involved tissue removed in a V-shaped segment of the lip. Ten months have elapsed since operation, and the cicatrix is firm.

8. Myxosarcoma: tumor weighing 12 ounces removed with right superior maxilla: there was a speedy renewal of morbid growths, which were removed (40 days subsequent to the first operation) by slitting right cheek from the angle of the mouth; new tumors cropping out, and increasing with great rapidity, further incisions were deemed inadvisable, and patient died at his home two months after the second operation.

9. Syphilis pr. with strangulation of glans penis, for relief of which prepuce was amputated.

10. Stricture urethræ of 19 years' continuance, with cystitis for last 5 years: urethra ruptured in membranous portion, and urine extravasated. After vainly endeavoring for weeks to pass the stricture, external section was performed. Parts healed kindly, and before patient was discharged to duty No. 1 English steel sound could be passed freely into bladder.

11. Stricture urethræ, with perineal abscess—incision and dilation of stricture, with satisfactory result.

12. Fistula in ano—incident to phthisis pneumonica chronica: Division by bistoury into rectum and through sphincter. Successful.

13. Hæmorrhois: external tumors removed by scissors: internal, 3 in number, by ligature.

14. Nephrotomy: abscess of left kidney evacuated by ample incision above crest of ilium: drainage established, and abscess irrigated with aqueous solution of carbolic acid. Death, following perforation and resulting peritonitis, resulted nine weeks after operation.

15. Paracentesis abdominis and removal of 47 ounces of fluid in a case of albuminuria chronica. Patient succumbed to disease a week after operation.

16. Vulnus laceratum: patient fell upon an iron picket fence, and one of the spikes entered left side near sternum, between seventh and eighth ribs, opening pleural cavity. Wound sealed and thorax fixed by broad adhesive strips. Recovery in three weeks.

17. Vulnus laceratum—face and right eye involved, deep suppuration, and periosteal inflammation of orbit: incisions made, and drainage established across lid to inner angle of eye. Recovery slow.

18. Fractura: left foot crushed under car-wheel—patient taken to civil hospital, where gangrene destroyed most of the phalanges, and caused extensive sloughing of tissues. On reception into this hospital, applied Esmarck's bandage, and removed the remains of the phalanges, and retrenched fourth and fifth metatarsal bones. Recovered with quite serviceable stump.

19. Fractura: Barton's, of right radius: perfect recovery.

20. Fractura: compound, of phalanges of right foot: crushed by revolving crank pin. Wounds sealed, recovery complete.

21. Fractura of left fibula, and injuries to ankle-joint and foot: kept in fracture box two weeks, then put up in plaster: recovery perfect.

22. Fractura of head and neck of right humerus: injury received in a fight; double pneumonia supervened, and patient died one week from receipt of injuries. Autopsy disclosed oblique fracture extending within the capsule, part of the head finely comminuted, and impaction of shaft, and clavicle torn from acromion.

23. Fractura, compound, of phalanges of middle and ring fingers, right hand: wounds sealed, and Palmer splint applied: good recovery.

24. Fractura of left tibia, lower third, and implicating ankle-joint. Parts placed in plaster bandage: recovery complete.

25. Gangrene: moist, of left foot, ankle, and leg: consequent to gouty diathesis and diabetes mellitus: patient was hiccoughing and moribund when admitted into hospital, and died the third day after.

The other deaths resulted from—

Aneurisma—abdominal aorta—tumor 5½ inches circumference, 6 inches long.

Hypertrophia cordis: weight of heart 32 ounces.

Pericarditis, with atheromatous degeneration of heart and aorta, and chronic nephritis.

Peritonitis: ulcerations and perforations of large and small intestines: all mesenteric glands, cheesy, and sacro-iliac cavities filled with pus.

Nephritis, chronic: both kidneys purulent.

Sclerosis of liver, and fibroid degeneration of kidneys.

Emphysema: pleural cavities filled with purulent effusion—patient in extremis when admitted, and died within 36 hours.

Morbi valvularum cordis and phthisis pneumonica chronica.

Four cases of scarlatina and one of varioloid were treated, and so isolated that none others became infected.

The following particulars of a case of sarcoma of the lower jaw are reported:

R. F. Schroeder, ordinary seaman, aged 20, native of Maryland, admitted January 19, 1880, from the Trenton.

Condition on admission.—There is no cachexia; no marked emaciation; no infiltration of submaxillary glands; very little loss of appetite; no febrile movement; no pain since the protrusion of the masses through the walls of the antrum in the early weeks of the disease; eye-sight not impaired; vegetative functions well performed; complains only of obstructive difficulties, such as interference with breathing and alimentation, and loss of sleep from dribbling of secretions of mouth into the air passages. The tumor now occupies the entire region of the right superior maxilla, distending the cheek, obliterating the right naris, filling the entire buccal cavity, and protruding through the mouth in an offensive mass, about the size of an orange. As there are no indications for medication, it is directed that he have freely beef essence, oyster soup, and milk, which require to be fed to him through a tube.

January 21.—Operation. The tumor, including one-half of the right malar bone and the entire superior maxilla, was removed this morning: anæsthetic, chloroform; its use being preceded by the administration of 1 ounce of whisky and ¼ gr. morph. sulph. The incisions were trans-facial, ¼ inch below edge of orbit, and extending from body of malar bone to inner angle of eye, joined by a perpendicular median cut following the outline of the nose and dividing the upper lip; dissected the inner flap and nose from attachments to bone, cleared tumor of the integuments of the cheek, divided the malar bone, the orbital plate, nasal process and hard palate, with saw and bone forceps, and completed the operation by wrenching the mass from its posterior attachments by means of the lion-jawed forceps; the hemorrhage throughout was comparatively trifling; no ligatures applied; no styptics except hot water; a few arterial branches twisted; wound closed about one hour after completion of operation; reaction from chloroform speedy and good; weight of tumor, 12 ounces.

January 22.—No dribbling into the fauces since the operation, at which the patient expresses great satisfaction, as he was able to sleep well for the first time in months; has taken freely of oyster soup, milk, and beef essence; bowels have been moved five times, probably due to irritation from an enema of brandy and beef essence given just at close of operation; for relief of this condition inserted a 2-grain opium suppository. Temperature last evening, 98°.8; pulse, 84; respiration, 23; this morning, temperature, 101°.7; pulse, 92; respiration, 24.

January 23.—All conditions favorable; right eye closed by swelling of loose tissues about it; suppuration has begun in the cavity; no evidence of it in the incisions; parotid region swollen, red, and painful. Temperature last evening 102°; pulse, 92; respiration, 24; this morning, temperature, 100°.5: pulse, 96; respiration, 23; apply evaporation lotion to swollen cheek.

January 24.—Continued improvement; no pain; swelling of cheek and tissues about eye remains the same: ℞. Tr. ferri chlor., f. ʒj; quiniæ sulph., gr. xxx; tr. opii, f. ʒjss. M. S., 30 drops in water every three hours. Last evening, temperature, 102°.8; pulse, 120; respiration, 26; to-day, 9 a. m., temperature, 102°.2, pulse, 104; respiration, 28; 8 p. m., temperature, 103°.2; pulse, 130; respiration, 28.

January 25.—Condition very satisfactory; swelling of face rapidly decreasing; expresses himself as feeling very well; 9 a. m., temperature, 101°; pulse, 102; respiration, 26; 8 p. m., temperature, 101°.2; pulse, 96; respiration, 24. No change in treatment.

January 26.—Continues to improve; removed sutures and hare-lip pins this morning; transverse cut healed and two-thirds of perpendicular incision; redressed with gauze and collodion; 9 a. m., temperature, 99°; pulse, 92; respiration, 20; 8 p. m., temperature, 100°; pulse, 96; respiration, 20.

January 28.—Is able to sit up in bed; scarcely any discharge from cavity, none externally; says "he feels strong and well;" every condition favorable; temperature, normal.

Microscopical examination shows the humor to be small, spindle-celled sarcoma, the stroma very transparent, fine fibrous tissue. A few giant cells are apparent and a minute melanotic deposit.

The patient from admission into hospital has been under the personal care of Passed Assistant Surgeon John L. Neilson, by whom the foregoing described operation was cleverly performed, with the assistance of others of the hospital staff, and witnessed by many of the medical officers of this station and vicinity.

NAVAL HOSPITAL, PHILADELPHIA, PA.

At this establishment 213 cases were treated, 8 more than during the preceding year. The ratio per M given by this aggregate is 172.33, the

number of sick-days 13,674, or a daily average of 37.25; 130 cases were cured, 17 were invalided, 23 died, and 43 were continued to the following year. The average duration of treatment was 64 days. In the zymotic class of diseases, 18 cases were reported, mostly (14 cases) of malarious fevers. There was 1 case of typhoid fever, which was fatal, and 2 cases of erysipelas were reported. This class furnishes a loss of 455 sick-days, and a ratio of 14.56 per M. The average duration of the cases was 25.27 days. The total of the class corresponded with that of last year. In the group of constitutional affections 31 cases were returned, a ratio of 25.08 per M. This number is less by 18 than that for the year 1879, the falling off occurring chiefly in the number of cases of rheumatism. The loss of service from this group was 4,016, and the average duration of treatment 129.54 days. There were 4 cases each of gout and rheumatism, 10 of senectus, 9 of syphilis, and 1 each of carcinoma and epithelioma, both of which proved fatal. Twenty-one cases represent the nervous group of diseases, which last year yielded 15; and they give a ratio of 16.99 per M, with a loss of 2,132 days. The duration of treatment of these cases averaged 101.52 days. The principal factor was paralysis, which gave 9 cases, 5 of which died; 1 case each of apoplexy and neuralgia also proved fatal. In explanation of these figures it will be borne in mind that the beneficiaries from the Naval Asylum are treated in this hospital. Two cases of conjunctivitis represent the ocular diseases, and there were none of affections of the ear or teeth. The circulatory system gave but 3 cases, 1 each of varix, valvular disease, and dilatation of the heart, the latter proving fatal; 295 sick-days belong to this class, which last year gave but 1 case. There were 12 cases of disease of the respiratory organs, two thirds the number of last year, and the ratio per M was 9.70. The resulting loss of service was 1,001 days, and the average duration of treatment 83.41 days. The factors of the class were asthma, 2 cases; chronic bronchitis, 2; pneumonic phthisis, 5; pleuritis, pulmonary congestion; and pneumonia, each 1; 5 deaths occurred, 3 from phthisis, and 1 each from bronchitis and pneumonia. Twenty-five cases of diseases of the digestive system were received, or 7 more than during the preceding year, and giving a ratio of 20.22 per M, with a loss of 1,614 days' service. The principal factors were 4 cases of constipation, 2 of which were reported as fatal; 7 of dyspepsia, 2 of hepatitis, and 4 of icterus. The group of genito-urinary affections gave 13 cases, one-third more than in 1879, a ratio of 10.51, and causing a loss of 581 days. Eight, or more than one-half the cases, were of enuresis, chiefly among the aged beneficiaries from the Naval Asylum. Diseases resulting from poisons yielded the large number of 50 cases of alcoholism, derived from the same source, giving a ratio of 40.45 with 1,193 sick-days, a daily average of 22.56 days; last year there were 45 of these cases. There are 25 cases of diseases from violence, 6 more than in 1879, 1 of which, a fracture, resulted in death. The ratio from this group was 20.22 per M, and the number of sick-days 1,455.

NAVAL HOSPITAL, WASHINGTON, D. C.

The number of cases treated at this institution during the year amounted to 121, a ratio of 97.89 per M. Of this number 88 recovered and were returned to duty, 6 were invalided, 5 died, and 22 were continued for treatment. The total number of sick-days was 4,389, the daily average of patients 36.27, and the average duration of treatment 11.99 days. Compared with last year, there were 9 fewer patients, but 136 more sick days, so that the average number of patients, as well as

the length of treatment, was rather greater than during 1880. There were 20 cases of zymotic affections, 5 more than last year; 17 of these were malarious fevers; and there were 2 cases of whooping-cough and 1 of measles. The ratio given by this group was 16.18 per M, and the number of sick-days, 423; 1 case of intermittent fever ended in death, and 1 was invalided from the service. In the constitutional group 20 cases were also reported, with the same ratio as the zymotic group. There were 3 cases of adynamia, 10 of rheumatism, 1 of which ended in death, and 5 cases of syphilis. This class furnished 5 cases less than last year, the falling off occurring in the number of cases of syphilis, while there were 2 cases more of rheumatism. The number of sick-days belonging to this class was 679, and the average duration of treatment, 32.9 days. The group of nervous diseases furnished but 6 cases, 3 of which were neuralgia, and there were single cases of epilepsy, irritation of the spine, and melancholia. The ratio per M was 4.74, and the number of sick-days, 141. The circulatory group gave single cases of aneurism, angina pectoris, valvular disease, palpitation, and pericarditis, a total of 5, or 3 less than last year. The loss of service from this group of diseases was 212 days. The absorbent system furnished 8 cases of adenitis, or 5 more than in 1879, with a loss of service of 550 days. There were 16 cases of disease of the respiratory organs, more than one-third less than in 1879, when there were 26. In the latter year there were 12 cases of bronchial affections, while in 1880 there were but 5, in 1879 9 cases of phthisis, and in 1880 but 4; 3 of the latter died. There were, besides, 2 cases each of pleuritis and pneumonia. The ratio per M given by the class was 12.94 and the number of sick-days, 677. The digestive group of diseases included 17 cases, 4 more than in 1879, with a ratio of 13.75 per M and a loss of 706 days' service. The largest factor was tonsilitis, of which there were 4 cases; next hæmorrhoids, which gave 3 cases. There were 2 cases each of diarrhœa, dysentery, fistula and hernia. The genito-urinary group furnished 10 cases, one-half of which were gonorrhœa; the others were, albuminuria 2, orchitis 2, and paraphymosis 1; the loss of service was 350 days. The number of cases belonging to this class in 1879 was but 7. The integumentary cases numbered 3, and there were 2 cases of alcoholism and 1 of delirium tremens. Diseases resulting from violence numbered 12, with a ratio per M of 9.70 and a loss of 494 days. The most numerous cases were fractures, of which there were 5, and contused wounds, of which 3 were returned. The number returned in 1879 was 17, the difference being mostly due to the large number of cases of stremma in that year.

Medical Director J. Y. Taylor makes the following report:

During the past year the general sanitary condition of this station was good, without the occurrence of epidemics or unusual sickness, except several cases of small-pox, which appeared on Capitol Hill in the latter part of 1879 and beginning of 1880. Some of these were in the neighborhood of the hospital, but no person connected with it was affected. Twelve deaths from this disease were reported in the District in January, 1880, 3 in February, and 1 in March. Total 16. The chief point of interest in this so-called epidemic of variola was the somewhat remarkable manner in which it began, to which reference will be made hereafter.

The United States Naval Hospital is located at a point as convenient as could be secured on this station, enjoying usually a fresh breeze, and during the heated term the temperature here is mostly from 10° to 15° Fahr. lower than many other parts of the city. The elevation is about 50 meters above the sea-level, and the neighborhood is no doubt as salubrious as any in this part of the District.

The subject of malaria has often been mentioned with reference to this particular locality. It appears probable that in the vicinity of this hospital, notably in the months of September, October, and November, a light grade of malaria prevails, which, while not often the cause of a full original paroxysm of intermittent or remittent fever, is sometimes quite sufficient to bring about a recurrence. This would imply

that an attenuated poison will produce a recurrence when, everything else being equal, it does not affect perceptibly the uninitiated. But the exact value of renewed exposure in causing a relapse cannot be estimated, for it is a matter of experience that no fresh exposure is necessary to the development of a recurrent attack, any disturbance of the economy, even a change of climate, being enough. It is not unusual with sojourners on the Isthmus of Darien to escape the "Chagres fever" for many months, only to be prostrated by it on returning home. Again, others have the fever, convalesce, and suffer a severe relapse on going north. A United States vessel remained in the Mississippi River until more than one-third of her crew were disabled by remittents and intermittents. When the men were apparently well and on duty, the ship went to cruise in the West Indies. It repeatedly happened that upon going from one island to another, in some instances only a short distance, numerous well-marked paroxysms would recur among the original sufferers. Thus the disease, once inaugurated, may reappear with all its characteristics, without additional poisoning. Perhaps this fact favors the theory that the spores of the bacillus malaria of Professors Klebs and Crudeli, from a passive state, are susceptible of being aroused to activity and increment in the system, under certain not well-defined circumstances. At all events, disease of malarious origin, considered as an entity, may remain dormant for an indefinite period.

It is believed by some that the soil of Washington is malarious (to use a somewhat paradoxical expression), as attested by the cases of fever which often occur near excavations and improvements, and there is good reason to conclude that when the wind blows from the direction of the Potomac flats a miasm is wafted over certain parts of the city. The monthly statements of the Health Department indicate the existence of an aerial poison.

In a markedly malarious region all affections are supposed to be more or less biased by the unseen presence, unless there be a condition of exemption. Is there such a state as exemption from malarious influence? That there may be appears probable, though hardly demonstrable. The essential factors are (1) time, and (2) a complete restoration from all after effects of previous attacks. Should any splenic or hepatic enlargement or functional derangement remain as a consequence, the predisposing causes still exist. There are individuals who have been brought up in malarious tracts, enjoyed a full course of the "shakes" for years perhaps, and then after a long time have entirely recovered without permanent structural or functional disorder. These are the exempts, if any. Several such cases were noted on board the public vessel above referred to during her service in the Mississippi River in an intensely miasmatic locality.

The origin of the miniature epidemic of variola before-mentioned was involved in obscurity. The first person to exhibit the disease in the District of Columbia, so far as could be ascertained, was a patient in Providence Hospital, understood to be a cripple who had been there a long while, and who had no means of access to, or communication with, any place where small-pox prevailed. Two similar instances have lately been reported in Boston, in which the origin of the disease could not be traced.

In relation to contagious affections, there are some often-repeated and puzzling questions to be met. Are they ever of spontaneous origin? If entirely "stamped out," would they again appear *de novo!* If always propagated by contagion, how did they originate primarily? The answers to these questions may be near at hand through the labors of the "germists." If every disease has a special causative germ it would seem desirable that each should be captured and classified. But this would be only the alphabet, and some idea may be gained of the difficulties to be surmounted by following the work of those who have vainly tried to find the particular germ of yellow fever. Every atom of organic matter in the universe obeys some law, and the important problem is not to discover special germs, but the germ-law. Possibly there may be a short road to reach the end, since it has been displayed by actual experiment that some varieties of microphytes are convertible one into another with entire change of character by culture. Thus the innocuous bacillus subtilis becomes the virulent bacillus anthracis, and the reverse—the bacillus anthracis, being cultured through only five or six generations, is transformed again into the harmless bacillus subtilis. What art accomplishes with difficulty and many failures, nature may do under favorable conditions. And in this connection a most significant fact has been elicited—that the bacteria of fermentation assume various forms and properties, according to the media in which they flourish, the temperature, and the supply of air and moisture.

The spread of highly contagious diseases, of which small-pox may be regarded as the type, is mostly by ways which appear plain to the coarsest observation, and it is rarely a case occurs which bears a similitude to what has been called spontaneity; and yet they may originate and extend only by the conversion of germs. Therefore if any contagious or zymotic disease could be entirely eradicated we have no guarantee that it might not reappear by conversion.

The late Dr. Barton, U. S. N., held until his death that there is no such thing as contagion, as the term is applied and understood. He believed the poisons of small-

pox, scarlet fever, and measles are perfectly harmless and inert to all persons except those in whom a morbid process is established rendering them susceptible. In other words, when the germs of a disease fall upon a soil unprepared to receive them, they lose their malignancy (by culture) and become passive. The opinions of a man of good judgment, who has thought deeply for many years on any given subject, are entitled to consideration, and this sometimes-ridiculed notion of Dr. Barton is nothing more nor less than the essence of the germ theory of disease as it stands to-day.

It has been established beyond dispute that when the decomposition of organic substances occurs in open space, with a plentiful supply of air, they are broken up and resolved into their original elements without the formation of pathogenic germs. And, further, even in animals dead of malignant pustule, murrain, and the like, the disease germs are neutralized when putrefaction takes place in the open air. Oxygen, then, is the great natural antiseptic, and all antiseptics, natural and artificial, probably act more upon the media (culture liquids) than upon the spores and germs themselves; and, as has been observed, the properties of germs vary with the nature of the nidus in which they are cultured. Pasteur has shown that germs cultivated in unhealthy saliva are capable of exciting septicæmia by inoculation, while perfectly healthy saliva is neutral. We must remember, also, that both bacteria and micrococci, in a passive state, exist normally in the normal fluids of the body, and both are susceptible of cultivation, particularly the former.

Not very long ago it was considered the best surgery to leave wounds, after operations, open until all oozing had ceased, and the surface was "glazed over with coagulable lymph." If the theory upon which the "Listerian system" purports to be based is true, such a practice must have been nearly always attended with the most disastrous results; yet it was not, for nothing was more common than for wounds so treated to unite by first intention throughout.

According to the disciples of Lister (and some of them have out-Listered Lister himself), one of the main objects of antiseptic precautions, including the spray, is to forestall the introduction of aerial germs. "The spray purifies the air, just as rain clears the atmosphere. Those who fail to use it abandon the breastplate of their armor and the protection which it affords against the poison darts in the atmosphere." (MacCormac Antiseptic Surgery, p. 161.)

We can readily admit the existence of a septic atmosphere, with "poison darts," q. s., in the wards of an institution like the Nussbaum Klinik at Munich, reeking with hospital gangrene, pyæmia, and erysipelas; and as readily recognize the urgent necessity for antiseptics and disinfectants in such a situation; but that the free air is everywhere teeming with miriads of noxious germs, entering all momentarily exposed wounds, is unreasonable and incredible; and the idea is at variance with the scheme of beneficent creation. Would it not be more philosophical to assume that all germs are harmless in their normal status, and remain so until cultivated or converted into a condition of activity and virulence.

While so much ingenuity is displayed in barricading the system against "poison darts" from without, it will not do to ignore the micro-organisms within, ready as any for conversion, development, and multiplication, should the conditions be favorable. Nor must we forget that cases of acute septicæmia, with putrefactive changes, have frequently occurred without the existence of an external wound.

Now, it happens that a closed wound furnishes the exact requisites for the culture and conversion of germs, namely, (1) a limited supply without total exclusion of oxygen, (2) warmth, and (3) humidity. Here lies, I conceive, one of the great dangers of the Listerian method, and one which will presently assist in exploding it as a "system."

Within the next decade surgeons will be obliged to dress wounds by the "open method" again, as of old, in order to keep pace with advanced germ theories.

Some instances have been brought to light where attempts to follow Listerism have been attended with the most unfortunate consequences. Was this because "of some imperfection in the manner of using it," or was it because the wounds were transformed into true culture-chambers, resulting in the production of pathogenic germs? The question must be regarded as still an open one, and by no means authoritatively decided. In short, the theoretical ground upon which the Listerian system is founded has not, in the present state of germ literature, a single absolutely proved fact to support it. As for "antiseptic surgery," it is as ancient as the mythical days of Chiron the Centaur, and no doubt when pre-historic man first knew the want of some application to his wounds, he went to the pine tree of the forest for its adhesive resin, and thus, instinctively, as it were, employed an antiseptic dressing.

Finally, it must be confessed, science as yet has reached only to the threshold of the wonderland of the microcosm; whatever further advance is made must come from the life-time work of young and earnest special devotees in this field. * * * * *

This hospital is well lighted and ventilated. The heating apparatus has the usual defects of of the hot-air system, but is efficient, except during unusually cold winters with high winds. In calm weather 200° Fahr., at the furnace gives about 70° Fahr.

all over the building. When strong winds prevail, the temperature in different parts of the house varies with the force and direction of the currents.

The drainage is defective, and will require modification at no distant day. The single waste-pipe, 20 centimeters in diameter, leads from the hospital to the Marine Barracks, distance about 350 meters, with insufficient fall, and is subject to frequent obstructions.

In the five wards there are accommodations for 50 patients, and under pressure 50 more could be housed temporarly by utilizing the upper story, and providing additional bedsteads and bedding. This third floor has never been arranged for the reception of patients, and would be unfit for that purpose in the summer months. With the complement of 50 patients in the wards there would be 20.306 cubic meters of air space for each person.

The provisions furnished by the contractor are generally of good quality, the least satisfactory being the fresh meat.

The building is supplied with Potomac water, forced up by a Knowles pump located in the basement into two reservoirs in the upper story. These reservoirs have a capacity of 3,320 liters each. Having been undisturbed for eighteen months, they were emptied for cleaning, and contained about 5 centimeters depth of sediment. It was without odor, and when dried and examined was found to consist of argillaceous and silicious particles in impalpable powder, with a minute trace vegetable fiber; no reaction with mineral acids.

A specimen of water as it came from the city pipes had less than 0.033 grains of sediment per liter, but this amount varies greatly according to the rainfall. After subsidence, 500 c. c. of water, with 1 c. c. of strong sulphuric acid, at 140° Fahr., decolorized 2 c. c. of the standard solution of potassium permanganate.

Two carefully conducted tests failed to detect the presence of nitrites (nitrous acid). Evaporated to dryness, the result gave 0.133 gm. of solid matter per liter. Tests for lime, iron, chlorine, and sulphuric acid were negative.

In case of fire in the hospital building, water from the reservoirs can be used with hose in the second story, within five minutes, under ordinary circumstances; and the pump can be started, with a pressure sufficient to reach the roof, in about fourteen minutes.

NAVAL HOSPITAL, NORFOLK, VA.

From this important establishment there were reported 266 cases, giving a ratio of 215.21 per M, and the resulting loss of service was 22,476 days; 111 cases were cured, 94 were invalided, 11 died, and 50 remained for treatment at the end of the year. Contrasted with the report of 1879, there were 14 more cases admitted, and the number of sick-days was greater by 5,391. The daily average number of patients, which in 1879 was 46.86, was in 1880 61.40, and the average length of treatment was, respectively, 67.79 and 84.49 days. In the class of zymotic affections there were reported 21 cases, a ratio per M of 16.99, giving a loss of 1,438 days' service. There were 2 cases of typhoid fever, which recovered, and 1 of typhus fever, which died; 17 of malarious fevers, 2 of which were invalided from the service, and 1 of roseola. This group gave 5 cases less than in 1879. The class of constitutional affections contributed 67 cases, 9 more than in 1879. The ratio per M was 54.20, and the loss of service was 1,415 days. The principal factors of the group were 15 cases of adynamia, 19 of rheumatism, 26 of syphilis, and 2 of tuberculosis; 21 were invalided from the service by reason of affections of this class, and there was 1 death from syphilis. Sixteen cases of nervous affections were returned, 6 more than in 1879, and the ratio given was 12.94, while the total loss of service was 1,107 days. The most frequent diseases of the group were dementia, epilepsy, and sunstroke, of which there were 3 cases, respectively. There was 1 case of apoplexy, which ended in death, and 1 case each of paralysis and tetanus, which recovered. Seven cases in all were invalided from the service, and 4 to other hospitals. Three cases of conjunctivitis and 1 of hemoralopia were returned, and 1 case of each affection was invalided from service. Of diseases of the circulatory organs, 1 case of hypertrophy of the heart, 6 of valvular disease, 1 of which ended fatally, and 7 of

palpitation were reported, 14 cases in all, giving a ratio of 11.32 per M, and 1,956 sick-days; 5 were invalided from the service in this class. This group of diseases furnished 13 cases last year. Five cases of adenitis were returned, as was the case in 1879. The group of diseases of the respiratory organs furnished 46 cases, or 7 less than in 1879. The ratio per M given by these was 37.21 and the number of sick-days 4,596. The catarrhal and bronchial cases numbered 21, of which 8 were invalided, and there were 10 cases of phthisis, 2 of which were invalided and 1 died; 9 cases of pneumonia were returned, which gave a mortality of 33 per cent., or 3 deaths, and 1 of the 2 cases of laryngitis ended in death. The class of digestive diseases gave a larger number of cases than any other hospital, viz, 26, or 8 more than in 1879. The ratio per M was 16.03, and the loss amounted to 1,635 sick-days. The largest factor of the group was hæmorrhois, which furnished 7 cases, against 2 in 1879, while the other affections corresponded nearly in numbers to those of that year. Diseases of the genito-urinary organs numbered 25, or 11 more than for the previous year. The ratio made by these was 20.22 per M, and the number of sick-days 2,367. There were 4 cases of enuresis, 4 of gonorrhœa, 5 of orchitis, 4 of urethral stricture, and 2 of albuminuria, 1 of which terminated fatally. Contrasted with the reports of 1879, there were a larger number of cases of gonorrhœa and orchitis. The locomotor system, which last year gave no cases, afforded 4 cases in 1880, 2 of synovitis and 1 of necrosis. The integumentary system was represented by 8 cases, as was the case in 1879, while there were no cases of diseases from poisons, of which there were 4 in that year. This station reported the largest ratio of diseases from violence, 23.46 per M, or 29 cases, a large increase over 1879, when there were but 15. The loss of service was 2,221 days, and the average duration 76.58 days.

Extracts from the report of Medical Director J. Suddards are given:

This hospital affords ward accommodations for 168 patients, with an average cubic air space of about 1,100 feet for each.

During the past year many improvements have been made within the building, and in the surrounding grounds. The most notable internal improvement is the introduction of the new steam apparatus for heating purposes, of which an exhaustive report has already been made to the bureau. Another notable improvement is the removal of the water-closets to the rear building. This arrangement necessitates some exposure on the part of the patients, but this disadvantage is more than counterbalanced by the absence of all noxious emanations, which, in spite of every effort to keep them pure and clean, always existed to a greater or less degree. Another great improvement was the removal of the old wooden tanks in the rear building, and replacing them by iron ones.

The external improvements during the past year are also worthy of note. The marine barracks being no longer necessary, the guard having been suppressed, has been utilized for boat-houses. The boat now in use for the general work of the hospital was reconstructed, at a moderate expense, from a condemned boat formerly in use. The grounds, which had suffered severely, from the tornado of the year previous, have been partially restored and embellished with numerous ornamental trees. The avenues have been widened and straightened, and the roadways put in good condition. The undergrowth, which had been allowed to overrun the pine grove at the rear of the building, has been cut away with ax and scythe, and a most pleasing improvement is manifest in the general presentment of everything.

NAVAL HOSPITAL, PENSACOLA, FLA.

No epidemic or prevalent sickness occurred during the year among our forces in the Gulf, so that but little requisition was made upon the resources of the hospital at this point. But 5 cases were treated during the period covered by the report, while the year 1879 gave 6 cases. These were single cases of febris remittens, sciatica, pulmonary phthisis,

hernia, and contusion. All but the latter were invalided. The number of sick-days resulting was 473, the daily average number of patients was 1.29, and the average duration of treatment was 94.6 days.

Surgeon A. N. Beaumont gives the following descriptive and sanitary report:

The hospital grounds lie between the navy-yard and Fort Barrancas, distant from the former in a westerly direction three-quarters of a mile. They comprise 30½ acres, and are shut in on all sides by a substantial brick wall, 14 feet high, in the course of which are four gates or ways of access to the interior, a large north and south gate, a smaller east gate, and an entrance from the westward by a small archway in the wall, fitted with a massive wooden door. To the southward is the Bay of Pensacola, distant 566 yards; to the northward is the National Cemetery, some 300 yards away; to the westward is the garrison mentioned above, about the same distance; and to the eastward is the straggling town of Warrington, an outgrowth of the navy-yard.

Hygiene.—The present hospital rests upon part of the foundation of the old hospital, destroyed by fire during the civil war. It is 42 feet above the sea-level, of the pavilion style, consisting of a simple row of wards, with surrounding balcony running east and west. It is a light frame structure, abundantly ventilated and well adapted to the climate. There are five wards of five beds each, allowing 1,047 cubic feet of air for each patient; next, the apothecary's room, office, and dispensary. The surgeons' quarters, a trifle smaller, is almost an exact counterpart of the above, with two officers' wards with an air-space of 2,860.5 cubic feet each. Both these buildings, with kitchen in common, were erected by contract in 1875, and with the completion of these ended all attempts at restoration or repair about the grounds since the destruction of the buildings during the rebellion. Great masses of *débris*, amounting in places to huge fragments of brick masonry, lie around. Here are the walls of a splendid cistern; there, rising 6 or 7 feet high, and running the entire length of the former buildings (the hospital proper and that for contagious diseases), an unsightly mass of brick and mortar. There, again, stands the old mortuary, of brick, as are all the other inclosures save the new ones, without sash or door, inviting repair which would cost but little. Time and war have dealt more kindly to the stables, yet the wooden pillars supporting an overhang of that part forming the carriage-house are fewer by two than at first, and the others are gradually slipping away. The old bakery is the baking place no longer, but is strong and almost water-tight; its windows and doors are also gone. The wash-house stands in the center of a drain, which was made to spread out at this point and again to narrow and leave the grounds as it came, by a ditch well bricked in. This, a two-story structure, is in a better state of preservation than any of the above-mentioned old buildings, and its upper story might be made to serve the place of a very useful ward, if this pestilential, mosquito-breeding, sluggish basin of water were given its proper exit to the sea, and its place occupied by a flower-bed or by the not pretty, but abundant, white sand. Near the wash-house stands the old engine-house, now stored with iron bedsteads. Last to be mentioned in this connection is the old ice-house, only part of which could have been used, I fancy, for the stowage of ice. It is in fair condition, and consists of two parts or floors; coal has been stowed below, and its upper floor has been used as a general store-room for old furniture.

Water.—The water supply of the hospital may be said to be in a very defective and unsanitary condition. Until quite recently the general supply has been from two pumps or driven wells; one furnishing water to the kitchen and hospital, the other to the medical officers' quarters. These wells consist of pipes, non-galvanized, driven from 25 to 30 feet into the earth, and furnished with pumps; but they are worn out and have ceased to furnish water at all. There are also in the grounds three brick-lined wells, which have been out of use for years, the water of which is unfit for potable purposes. The present source of supply to the kitchen is the water from a well about 4½ feet in diameter and 5 feet deep, situated in the lower part of the grounds, which is not only inconvenient but objectionable from the fact of its being surrounded by the drainage waters from about Fort Barrancas and the naval reservation west of the grounds. These drainage waters above mentioned are furnished from several small streams which drain the southern slopes of Fort Barrancas and the interjacent portion of the naval reservation; and these unite to form one stream or drain, which, after winding its way through a dense undergrowth, traverses the lowest part of the hospital grounds, where, in the vicinity of the well and surrounding it, for purposes of ornamentation—I can conceive of no other reason—it has been allowed to spread out, forming a shallow, sluggish basin of water 210 feet long with an average width of 30 feet, surrounded by a brick wall. This pond, owing to the very small fall, is almost stagnant even in the wet season of the year, and in the summer months furnishes a luxuriant growth of water-plants and other vegetable fungi, which must certainly conduce to unhealthfulness if not positive sickness. It is easy to see that

water from a brick-curbed well situated in this pond is not properly protected from impurities and is not to be relied upon, though by examination it is never proved other than a potable fluid; and this is easily accounted for by the substantial curb and the thorough filtration which must take place (before water is admitted within) through the deep white sand around and below. The other and only water supply is at the surgeon's quarters, and is that which is furnished from the roof of the building, an arrangement of the present year, 1880. This is conducted into a brick cement-lined tank, with a capacity of about 1,400 gallons, situated in the rear of the quarters. This water is as good as can be obtained from a shingle roof, containing a trifling amount of organic matter; occasionally, too, it has an appreciable bitter taste. For a time before the construction of the present tank which supplies the officers' quarters, and which is inadequate from its small dimensions for the supply of any other than this portion of the hospital buildings, the whole supply to the hospital was obtained from the well described above. The two driven wells or pumps above mentioned as being in disuse have become so from natural causes, as corrosion, sand clogging, &c. It ha sbeen observed that malarial influences seem to have been more strongly marked at the hospital than at any point in its vicinity. Surgeon Oberly, who removed his residence from the yard in order to enjoy, as he supposed, a more salubrious and healthful locality on the high ground of the hospital, suffered the most violent attack of malarial fever, and I am informed has always attributed the cause to the influence of the present pond and the water supply.

Recommendations.—First, that two driven wells or pumps be placed in the inclosure, one by the kitchen and one by the hospital, in such inconspicuous positions as not to mar the appearance of the grounds. Driven wells are recommended rather than cisterns, as the building of the latter would entail, to insure the collection of pure water, the expense of replacing the shingles which now cover the comparatively new buildings with slate, construction of tanks, conductors, &c. Second, that the basin in the lower part of the grounds be filled in with white sand or good earth, to the end that a large surface of ditch water may be disposed of, and in its place be left simply a continuation of the narrow drain above and below, 18 inches wide, which answers every purpose. Third, that cells or some sort of prison house be constructed on the grounds, for the infliction of punishment for such offenses as may require confinement. It is necessary, at present, to ask for the use of the cells of the yard. This becomes very inconvenient when the man's meals, his medicine, and visits from the surgeon are considered in connection with the distance of these cells from the hospital, about three-quarters of a mile. Fourth, that the great mass of *débris* be removed, and the mortuary and stables be repaired.

NAVAL HOSPITAL, MARE ISLAND, CAL.

The number of cases treated at this hospital during the year was 155 a ratio of 125.40 per M. The number for the year 1879 was 140, so that there was an increase of 15 cases, or a ratio of 12.04 per M. Of the total, 56 were cured, 54 were invalided, 6 died, and 39 were continued at the close of the year. These numbers gave a loss of service of 11.343 days, a daily average of 30.99 patients, and an average duration of treatment of 73.11 days. The zymotic class was represented by single cases of febricula and enteric fever, and 8 cases of malarious fevers. This shows an amount equal to the number of last year, and the loss of service due to these was 247 days. In the class of constitutional affections, 37 cases were reported, an increase of 1 over the number of last year. This aggregate was made up of 9 cases of adynamia, 7 of rheumatism, and 21 of syphilis. The resulting loss of service was 2,952 days, an average of 79.78. Nervous diseases produced 19 cases, a ratio of 15.37 per M. This was two less than the number for 1879, and the number of sick-days was 2,303. The most important of the cases were 4 of dementia, 3 of mania, and 6 of paralysis. There was 1 case of melancholia, which resulted in death. Eye diseases were 3 in number, less than half the number of 1879, which gave 7, and there were 3 cases of ear affections, the same number as in last year. The circulatory organs gave a total of 10 cases, more than double the number for 1879, when but 4 were reported. They included single cases of aneurism, angina pectoris, and hypertrophy of the heart, 4 of valvular diseases,

2 of palpitation, and 1 of varix. The case of aneurism resulted fatally, and 4 cases in the class were invalided. The number of sick-days was 658. There were in the class of diseases of the respiratory organs 28 cases, a ratio per M of 22.65, and giving a loss of service of 2,012 days. This is an increase of 3 over last year. They included 3 cases of asthma, 9 of bronchitis, 14 of phthisis, 1 of which died, and 1 each of pleuritis and pneumonia. Fifteen cases make up the total of digestive diseases reported from this hospital, an increase of 6 over the number for 1879. The ratio per M given was 12.13, the loss of service, 762 days. There was 1 death from acute dysentery, 5 among the class were invalided. The genito-urinary organs yielded a total of 8 cases, a ratio of 6.47 per M, an increase of 1 case over last year. The locomotor system, which last year gave no cases, yielded 1 each of coxalgia and synovitis in 1880, while the integumentary system, of which 1 case of disease was reported in 1879, gave this year none. Four cases of alcoholism were received in 1880, while but 1 was reported in 1879. Fifteen cases of diseases resulting from violence were returned, nearly the same as in 1879.

Medical Director G. Peck reports:

The records of the past year offer no exception to the generally good hygienic condition of the station. The hospital has been visited by no epidemic. The patients are received, as a rule, from the United States Naval Hospital at Yokohama, and from the vessels of the Asiatic and Pacific squadrons.

The hospital building is a comparatively new structure, completed by contract in 1870. It stands in an isolated position, facing easterly, and one mile from the office of the commandant of the station and the various workshops, on a slope which terminates in a salt marsh, the latter extending to Mare Island Straits, on the opposite shore of which is the town of Vallejo. It is to windward of the marsh, and is about 66 feet above mean low water. It is built on the pavilion plan, having a basement and three stories, with two wings, separated by an administrative building. There are four wards on the main and second floors, two in each wing, while the central building contains the offices, quarters for officers, and on the upper floor an operating theater. Each ward is 24 by 66 feet, with ceilings about 15 feet high, and in the walls are 8 ventilating flues, with openings 6 by 8 inches; each ward has also thirteen windows 9 feet 5 inches in height, placed about 2 feet 9 inches from the floor and 3 feet from the ceiling; there is also an open fireplace at each end of the wards. The front windows of the wards look upon balconies, which are much frequented by the patients. Each ward contains twenty beds; in case of need this number might be somewhat increased with safety, the present air-space being about 1,300 cubic feet per bed. The stone foundation of the building rests upon disintegrated sandstone and shale.

The basement, beneath which are no openings for ventilation, is floored with wood, and is 5½ feet below the level of the ground. It is partitioned and occupied as sleeping quarters for employés, and as a kitchen, mess-room, boiler-room, with steam-pumps, laundry, store-rooms, &c. The walls of these rooms are damp throughout the year. The walls of the hospital, from the foundation up, are of brick, strengthened by wrought-iron bands, and are 24 inches thick, including an interspace of 2 inches between the inner and outer walls, filled with debris of brick, pieces of mortar, &c. Another point in the construction of this edifice relates to the material of its walls. The bricks of which they are built were made on the premises from a deposit of clay near by, but experience has proved these to be of so porous a quality that the severe driving rain-storms of the winter always force a way through to the inner walls, which are very damp on the weather side, and in various parts of the house are covered by a white efflorescence which gradually crumbles and falls to the floors, or they are mottled by stains which paint fails to conceal for any length of time. The offices and officers' quarters are heated by grates, but as there is no apparatus for heating the halls, the plastering of these and of the unoccupied rooms remains damp until near the close of summer. The floors are laid in Oregon pine and painted. The water-closets, bath-rooms, and lavatories are in lobbies at the further end of each ward, communicating directly therewith by doors; in the central building they open into the main halls. The closets are of the old, simple hopper variety, with single trap and ventilated soil pipe. The operating room, on the third floor of the central building, is of necessity also used as a morgue and autopsy room, the dead being removed to the upper floor in an elevator worked by hand.

The site offers the best conditions for sewerage if properly utilized, the slope from it having an ample fall and permitting a direct sewage line to the marsh in front, where it would be discharged into the waters of the straits. The sewage now dis-

charges about 284 yards from the building into a small creek through an unventilated oval brick sewer of 15 inches vertical diameter and at an elevation above high-water. From some fault in the construction and connection of the branch pipes to the sewer the present mechanism for the discharge of sewage is quite unsatisfactory. There is always an offensive odor in and near the closets, and when the wind is from the east the stench is perceptible, more or less, in the halls as well as the wards. All attempts to remove this nuisance by special flushing are ineffectual. The dangers of a defective sewage system would be much more grave were it not that the climate of Mare Island permits abundant natural ventilation through open windows, except when the weather is stormy or so cool as to demand a fire, when the grates at each end of the wards fulfill in part the purposes of both warmth and ventilation.

I have to mention the insufficient water supply. Water for the entire island is derived partly from the Vallejo water-works, partly from a reservoir on an elevated part of the island, filled by the winter rainfall. The hospital is so placed that the former source does not carry the water above the first floor; for the rest we have to depend upon a steam-pump, which forces it into two tanks, holding each 3,000 gallons, at the top of the house; thence it is distributed by pipes through the building. There is no special connection for service in case of fire, and, indeed, in case of any serious conflagration the tanks would soon be exhausted. The reservoir of the island holds about 13,000,000 gallons, but this is used very sparingly, being kept as a reserve in case of interruption of the other means of supply to the navy-yard. Were we always supplied from this source water would be abundant and of sufficient pressure to reach the second floor. In addition to indoor uses it is most desirable that it should be more plentiful for the sake of the grounds and shrubbery, bearing in mind that there is no rain in this country for seven or eight consecutive months. Without a large outlay the capacity of this reservoir could be so increased as to supply the most urgent demands of the island, and a smaller one could be constructed near the hospital in a ravine, which would be of great use as an auxiliary in irrigating the grounds.

The house is lighted by gas manufactured on the hospital grounds. The quality is good, but the cost is high, as is usual where gas is made from animal oil, and the better method would be to light the hospital as the rest of the island is lighted, by gas from Vallejo, or to supplant the apparatus in use by one to manufacture illuminating gas from petroleum, which now can be had on this coast at a cheap rate, and thus reduce the expense of lighting. The steam generator of the hospital has long been considered unfit for use; it has been many times repaired, and official reports on the subject from the office of the chief engineer of the yard have already been furnished to the bureau, together with estimates for a new boiler and for a new boiler-house apart from the main building. The cylinder boiler for water for bathing purposes, which is heated solely by steam from the steam-generator, is in a condition even worse than the latter; it is so frail that it is difficult to find a part thick enough to bear a patch.

NAVAL HOSPITAL, YOKOHAMA, JAPAN.

The returns from this hospital indicate a reduced percentage of sickness in the Asiatic squadron from that reported in 1879, there being a falling off of 10 cases from the number, 75, reported for that year. Of the 65 cases returned, 42 were cured, 16 were invalided, and there were no deaths. The loss of service was 3,659 days, or 523 less than for the previous year. The daily average number of patients was 9.99, and the average duration of treatment 56.29 days, an increase of nearly 1 day over that of 1879. In the zymotic group of diseases 2 cases were returned, double the number of last year, of which 1 was of typhoid fever, and the other remittent fever, both of which recovered. The constitutional group gave 13 cases, half the number of 1879, of which 3 were syphilitic, 5 rheumatic, 1 scrofulous, and 3 adynamic cases. The group gave a ratio of 10.51 per M, and a loss of 755 days' service. There were 3 cases of nervous diseases, 1 less than last year, and there were 1 each of epilepsy, sunstroke, and neuralgia. The loss of service from these was 272 days, or 90.66 per man. There were also 3 cases of eye diseases, which last year were unrepresented. 1 of keratitis, and 2 of gonorrhœal ophthalmia. The loss of service was 388 days, the average duration of these cases being 129.33 days. Nine cases of affections of the circulatory organs were returned, 3 times the number in 1879; 4 of these

were affections of the valves of the heart, and the remainder single cases of endocarditis, hypertrophy, palpitation, phlebitis, and varix. The ratio per M was 7.27, and the loss of service 383 days, or 42.55 per man. Diseases of the respiratory organs numbered 5, 3 less than last year: 4 of these were bronchitis and 1 of phthisis. The loss of service was 182 days. The digestive group of diseases furnished 12 cases, 3 more than last year. They included single cases of icterus, hepatitis, peritonitis, and cirrhosis hepatis. The ratio per M was 9.70, and the loss of service 353 days. Seven cases of urethral stricture were treated here, and constituted all the cases in the group of genito-urinary diseases, which gave last year 6 cases. The loss of service from these cases was 584 days, or 83.42 days per man. There were 2 cases of skin disease and 8 of diseases from violence, both numbers corresponding to those of last year. The loss of service from the latter group was 561 days, or 70.12 days for each case.

Medical Inspector A. C. Rhoades draws attention to several matters respecting the sanitary condition of the hospital:

The ventilation of the ward in the second story of the main building of this hospital is not entirely satisfactory, but as attention has been called to this in previous reports I shall not enter into particulars now; not thinking that any great necessity for change exists at present, as, although there would be difficulty in ventilating it properly if every bed was occupied, the number of patients at any time under treatment is so limited that we have no trouble in getting plenty of pure air for all without dangerous or uncomfortable draughts. The drinking-water for the hospital is supplied by a well 75 feet deep, which is midway between the rear of the main building and the cook-house; examination of the water last year showing that it contained organic matter, the drains in the vicinity were overhauled and found to be worn out; these have since been thoroughly repaired, and contamination of the well from this source is impossible. The roof on the building for infectious diseases being so leaky that the wards were uninhabitable and receiving much damage from our heavy rains, a new one was put on; it is now in good order, and the place can be occupied whenever it may be required. There has been no small-pox in Yokohoma for the last two years, the efficient regulations made for vaccination having eradicated the disease; whether this total immunity will continue is doubtful, but we have good reason to believe that while the present excellent rules are enforced the Japanese will not suffer from another severe epidemic of variola. The government has a vaccine farm in the suburbs of Tokio where fresh bovine virus can usually be procured, and our men-of-war on this station should be supplied from that place. Malarial diseases are common in and about Yokohama, being quite as often met with among those living in the elevated portion of the town known as the Bluff as in the low and marshy districts of the old settlement; this is probably owing to the proximity of the Bluff to the rice-fields, from which the prevailing wind bears the air loaded with malaria to the heights above. Ka-ké, or beri-beri, an endemic disease of Japan, is often met with among the native population of Yokohama; thus far foreigners have not suffered from it; yet, as liability to the disease increases with length of residence in the localities where it prevails, this protection may not continue. There is little danger, however, that our sailors in their brief visits to the shore will ever be affected, a somewhat prolonged exposure to the cause seeming necessary for the development of ka-ké. The treatment is symptomatic; hydragogue cathartics and diuretics being given for the dropsy, and quinine and iron for the anæmia, which is such a prominent feature of the advanced stages. At an early period permanent recovery follows removal from the infected location, but the disease recurs subsequently from very slight exposure to the cause, which is believed by many native physicians to be a peculiar malaria developed in damp cities.

TABLE I.—*Showing the number admitted and discharged, number of sick-days, average number of days under treatment, and the daily average number of sick in the naval hospitals.*

Hospitals.	Remaining from last year.	Admitted.					Discharged.							
		First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total treated.	Cured.	Invalided.	Died.	Total.	Continued.	Total number of sick-days.	Average number of days under treatment.	Daily average number of sick.
Chelsea, Mass	29	23	20	29	14	115	67	38	2	107	8	6,803	59.15	18.58
Brooklyn, N. Y	66	52	55	65	58	296	150	80	17	247	49	16,374	55.31	44.73
Philadelphia, Pa	37	52	39	48	47	213	130	17	23	170	43	13,634	64.00	37.25
Washington, D. C	7	30	27	19	38	121	88	6	5	99	22	4,389	36.27	11.99
Norfolk, Va	60	55	70	32	49	266	111	94	11	216	50	22,476	80.49	61.40
Pensacola, Fla	3	.....	1	1	.....	5	1	4	.....	5	.....	473	94.6	1.29
Mare Island, Cal	22	29	41	17	46	155	56	54	6	116	39	11,343	73.11	30.99
Yokohama, Japan	7	12	18	23	5	65	42	16	.....	58	7	3,659	56.29	9.99
Total	221	253	271	234	257	1,236	645	309	64	1,018	218	79,151	64.03	216.25

TABLE II.—*Showing the aggregate number of admissions, discharges, and deaths, number sick-days, duration of treatment, and daily average number of men at the naval hospit*

Diseases and injuries.	Number of cases.	Number of sick-days.	Average number of men sick daily.	Average number of days under treatment.	Number discharged to duty.	Number invalided.	Number died.	Number continued
GENERAL DISEASES.								
1.—Zymotic diseases.								
Erysipelas	4	27	.07	6.75	1	.....	1	
Febricula	1	5	.01	5	1	.....	.....	
Febris continua simplex	2	83	.22	41.5	2	.....	.....	
Febris enterica	7	419	1.14	59.85	4	.....	1	
Febris intermittens	58	2,050	5.60	35.34	42	5	2	
Febris remittens	15	758	2.07	50.53	12	2	.....	
Febris typhus	1	3	.....	3	.....	.....	1	
Morbilli	2	22	.06	11	1	.....	.....	
Pertussis	2	85	.23	42.5	2	.....	.....	
Roseola	1	82	.22	82	1	.....	.....	
Scarlatina	4	100	.27	25	4	.....	.....	
Total	97	3,634	9.92	37.46	70	7	5	
2.—Constitutional diseases.								
Adynamia	52	3,532	9.65	67.92	22	20	2	
Anæmia	3	279	.76	93	2	1	.....	
Atrophia	1	40	.10	40	1	.....	.....	
Carcinoma	3	169	.46	56.33	2	.....	1	
Diabetes	2	77	.21	38.5	.....	1	.....	
Epithelioma	2	108	.30	54	1	.....	1	
Hydrops	1	135	.36	135	1	.....	.....	
Podagra	4	118	.32	29.5	4	.....	.....	
Rheumatismus acutus	34	2,216	6.05	65.17	25	4	1	
Rheumatismus chronicus	56	2,932	8.01	70.21	30	19	2	
Scrofula	1	16	.04	16	1	.....	.....	
Senectus	14	2,645	7.22	117.5	2	3	3	
Syphilis primitiva	42	3,039	8.30	72.35	28	6	.....	
Syphilis consecutiva	59	4,556	12.44	77.22	34	14	1	
Tuberculosis	3	201	.54	67	1	1	.....	
Total	277	20,063	54.81	72.42	154	69	11	
LOCAL DISEASES.								
1.—Diseases of the nervous system.								
Apoplexia	3	318	.86	106	.....	.....	3	
Cephalalgia	6	154	.42	25.66	3	3	.....	
Dementia	13	1,751	4.78	134.69	.....	8	.....	
Epilepsia	11	655	1.78	59.09	2	8	.....	
Insolatio	4	122	.33	30.5	2	2	.....	
Irritatio spinalis	2	60	.16	30	1	1	.....	
Insomnia	1	30	.08	30	1	.....	.....	
Mania	6	114	.31	19	1	4	.....	
Melancholia	7	482	1.31	68.85	4	.....	1	
Nausea marina	1	214	.58	214	.....	1	.....	
Neuralgia	11	805	2.19	57.5	8	4	1	
Nostalgia	1	12	.03	12	.....	1	.....	
Paralysis	19	2,736	7.47	144	1	8	5	
Pleurodynia	1	18	.04	18	1	.....	.....	
Sciatica	3	128	.34	42.66	2	1	.....	
Tetanus	1	28	.07	28	1	.....	.....	
Vertigo	2	14	.03	7	2	.....	.....	
Total	95	7,641	20.87	80.43	29	41	10	
2.—Diseases of the eye.								
Amaurosis	1	17	.04	17	.....	.....	.....	
Conjunctivitis	10	669	1.82	66.90	5	3	.....	
Hemeralopia	1	59	.16	59	.....	1	.....	
Iritis	4	210	.57	52.5	2	1	.....	
Keratitis	2	271	.74	135.5	.....	1	.....	
Ophthalmia	2	52	.14	26	2	.....	.....	
Ophthalmia gonorrhöica	2	169	.46	84.5	2	.....	.....	
Ophthalmia tarsi	1	127	.34	127	.....	1	.....	

TABLE II.—*Showing the aggregate number of admissions, discharges, &c.*—Continued.

Diseases and injuries.	Number of cases.	Number of sick days.	Average number of men sick daily.	Average number of days under treatment.	Number discharged to duty.	Number invalided.	Number died.	Number continued.
LOCAL DISEASES—Continued.								
2.—*Diseases of the eye*—Continued.								
Pterygium	1	87	.23	87	1	.....	.....	.....
Retinitis	2	75	.20	37.5	.....	2	.....	.....
Total	26	1,736	4.74	66.76	12	9	.....	5
3.—*Diseases of the ear.*								
Otitis	4	373	1.01	93.25	2	1	.....	1
Otorrhœa	2	125	.34	62.5	.....	2	.....	.....
Surditas	5	501	1.36	100.2	3	2	.....	.....
Total	11	999	2.73	90.81	5	5	.....	1
4.—*Diseases of the teeth.*								
Odontalgia	1	6	.01	6	.....	1	.....	.....
Total	1	6	.01	6	.....	1	.....	.....
5.—*Diseases of the circulatory system.*								
Aneurysma	3	140	.38	46.66	.....	.....	2	1
Angina pectoris	3	75	.20	25	.....	1	.....	2
Dilatatio cordis	1	23	.06	23	.....	.....	1	.....
Endocarditis	1	43	.11	43	.....	1	.....	.....
Hypertrophia cordis	3	404	1.10	134.66	.....	2	.....	1
Morbi valvularum cordis	21	1,922	5.25	91.52	3	11	2	5
Palpitatio	15	1,260	3.44	84	6	4	.....	3
Pericarditis	2	66	.18	33	1	1	.....	.....
Phlebitis	1	13	.03	13	1	.....	.....	.....
Varix	4	178	.48	44.5	1	2	.....	1
Total	54	4 124	11.26	76.37	14	22	5	13
6.—*Diseases of the absorbent system.*								
Adenitis	24	1,950	5.32	81.25	15	3	.....	6
Total	24	1.950	5.32	81.25	15	3	.....	6
7.—*Diseases of the respiratory system.*								
Asthma	12	599	1.63	49.91	3	6	.....	3
Bronchitis acuta	28	1.212	3.31	43.28	15	4	.....	9
Bronchitis chronica	31	2,418	6.60	78	12	12	1	6
Catarrhus	8	484	1.32	60.5	2	2	.....	4
Congestio pulmonalis	1	8	.02	8	1	.....	.....	.....
Hæmoptysis	7	433	1.18	61.85	4	2	.....	1
Laryngitis	3	165	.45	55	1	.....	1	1
Phthisis pneumonica acuta	6	474	1.29	79	2	2	1	1
Phthisis pneumonica chronica	46	5.400	14.75	108.69	10	14	9	13
Pleuritis	16	824	2.25	51.5	11	3	.....	2
Pneumonica	24	1,591	4.34	66.29	7	6	8	3
Total	182	13,608	37.18	74.76	68	51	20	43
8.—*Diseases of the digestive system.*								
Ascites	2	178	.48	89	.....	1	.....	1
Cholera morbus	2	8	.02	4	2	.....	.....	.....
Cirrhosis hepatis	1	20	.05	20	1	.....	.....	.....
Colica	1	16	.04	16	.....	.....	.....	1
Congestio hepatis	1	82	.22	82	1	.....	.....	.....
Constipatio	5	681	1.86	136.2	.....	2	3	.....
Diarrhœa acuta	9	305	.83	33.88	6	3	.....	.....
Diarrhœa chronica	8	281	.76	35.12	6	2	.....	.....
Dysenteria acuta	10	215	.58	21.5	8	.....	1	1
Dysenteria chronica	4	241	.65	60.25	1	3	.....	.....
Dyspepsia	16	1.251	3.41	78.18	9	5	.....	2

TABLE II.—*Showing the aggregate number of admissions, discharges, &c.*—Continued.

Diseases and injuries.	Number of cases.	Number of sick days.	Average number of men sick daily.	Average number of days under treatment.	Number discharged to duty.	Number invalided.	Number died.	Number continued.
LOCAL DISEASES—Continued.								
8.—Diseases of digestive organs—Contin'd.								
Enteritis	1	3	.....	3	1	.....	.....	.....
Fistula in ano	6	477	1.30	79.5	4	.....	.....	2
Gastritis	1	2	.....	2	.....	.....	1	.....
Hæmorrhois	20	1,021	2.78	21.05	12	6	.....	2
Hepatitis acuta	2	74	.20	37	2	.....	.....	.....
Hepatitis chronica	2	64	.17	32	1	1	.....	.....
Hernia	20	1,237	3.37	61.85	3	15	.....	2
Icterus	10	444	1.21	44.40	8	1	.....	1
Peritonitis	1	2	.....	2	.....	.....	1	.....
Pharyngitis	3	82	.22	37.33	2	.....	.....	1
Tonsillitis	6	55	.15	9.16	6	.....	.....	.....
Vermes	1	17	.04	17	1	.....	.....	.....
Total	132	6,756	18.45	51.18	74	39	6	13
9.—Diseases of the genito-urinary system.								
Albuminuria	6	450	1.22	75	2	.....	2	2
Chancroides	1	48	.13	48	1	.....	.....	.....
Cystitis	4	505	1.37	126.25	2	1	.....	1
Enuresis	14	583	1.59	41.64	3	8	.....	3
Gonorrhœa	37	1,620	4.42	43.78	24	4	.....	9
Hæmaturia	2	13	.03	6.5	.....	.....	.....	2
Nephritis	3	258	.70	86	1	2	.....	.....
Orchitis	13	776	2.12	59.69	8	3	.....	2
Paraphymosis	1	13	.03	13	1	.....	.....	.....
Phymosis	2	129	.35	64.5	.....	.....	.....	2
Pyelitis	1	2	.....	2	.....	1	.....	.....
Prostatitis	1	68	.18	68	1	.....	.....	.....
Spermatorrhœa	2	40	.10	20	1	.....	.....	1
Urethræ strictura	21	1,931	5.27	91.95	9	3	1	8
Varicocele	1	76	.20	76	.....	1	.....	.....
Total	109	6,512	17.79	59.74	53	23	3	30
10.—Diseases of the locomotive system.								
Arthritis	1	50	.13	50	1	.....	.....	.....
Ankylosis	1	59	.16	59	.....	1	.....	.....
Caries	2	190	.51	95	.....	1	.....	1
Coxalgia	1	81	.22	81	.....	1	.....	.....
Necrosis	1	26	.07	26	1	.....	.....	.....
Periostitis	2	74	.20	37	2	.....	.....	.....
Synovitis	6	675	1.84	113.5	3	1	.....	2
Total	14	1,155	3.15	82.5	7	4	.....	3
11.—Diseases of the integumentary system.								
Abscessus	15	1,143	3.12	76.2	9	1	1	4
Eczema	6	382	1.04	63.66	3	2	.....	1
Onychia	1	16	.04	16	1	.....	.....	.....
Unguis involutis	1	14	.03	14	1	.....	.....	.....
Ulcus	7	268	.73	38.28	5	1	.....	1
Verrucæ	1	59	.16	50	.....	1	.....	.....
Total	31	1,882	5.14	60.70	19	5	1	6
12.—Non-malignant tumors and cysts.								
Fibroma	1	92	.25	92	1	.....	.....	.....
Lipoma	1	44	.12	44	1	.....	.....	.....
Sarcoma	2	112	.30	56	.....	1	1	.....
Total	4	248	.67	62	2	1	1	.....

TABLE II.—*Showing the aggregate number of admissions, discharges, &c.*—Continued.

Diseases and injuries.	Number of cases.	Number of sick days.	Average number of men sick daily.	Average number of days under treatment.	Number discharged to duty.	Number invalided.	Number died.	Number continued.
POISONS.								
Alcoholismus	60	1,496	4.08	24.93	53	2	.....	5
Delirium tremens	1	7	.01	7	1	.....	.....	.....
Total	**61**	**1,503**	**4.10**	**24.63**	**54**	**2**	.....	**5**
VIOLENT DISEASES AND DEATHS.								
Abrasio	3	149	.40	76	2	1	.....	.....
Ambustio	3	198	.54	66	3	.....	.....	.....
Concussio cerebri	4	274	.74	68.5	3	.....	.....	1
Contusio	13	403	1.10	31	5	7	.....	1
Fractura	42	3,119	8.52	74.26	22	9	2	9
Luxatio	13	607	1.65	46.69	7	4	.....	2
Stremma	13	735	2	56.53	9	2	.....	2
Vulnus contusum	12	630	1.72	52.5	8	.....	.....	4
Vulnus incisum	4	218	.59	54.5	3	1	.....	.....
Vulnus laceratum	7	569	1.55	81.28	5	2	.....	.....
Vulnus punctum	1	106	.28	106	1	.....	.....	.....
Vulnus sclopetarium	1	31	.08	31	.....	1	.....	.....
Cicatrix memb. trunc. irritab	2	294	.80	147	1	.....	.....	1
Total	118	7,334	20.03	62.15	69	27	2	20
Grand aggregate	1,236	79,151	216.25	64.03	645	309	64	218

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease and injury at the several naval hospitals.*

Stations	Hospital, Chelsea, Mass.				Hospital, Brooklyn, N. Y.				Hospital, Philadelphia, Pa.				Hospital, Washington, D. C.				Hospital, Norfolk, Va.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES.																				
1.—*Zymotic diseases.*																				
Erysipelas	1			1					2											
Febricula					1															
Febris continua simplex					2															
Febris enterica	1				1				1			1					2			
Febris intermittens	1				10		2	1	11				16		1	1	13		2	
Febris remittens					4		1		3				1				4			
Febris typhus																	1			1
Morbilli									1				1							
Pertussis													2							
Roseola																	1			
Scarlatina					4															
Total	3			1	22		3	1	18			1	20		1	1	21		2	1
Ratio per M	2.34			.80	17.79		2.34	.80	14.56			.80	16.18		.80	.80	16.99		1.61	.80
Number of sick-days	132				808				455				423				1,438			
Average number sick daily	.36				2.20				1.24				1.15				3.92			
Average number sick daily per M	.29				1.77				1				.93				3.17			
Average duration of treatment	44				36.72				25.27				21.15				68.47			
2.—*Constitutional diseases.*																				
Adynamia	7	1	2		14		2	2	1				3	1			15	1	6	
Anæmia									1								1			
Atrophia					1															

Carcinoma					2				1			1								
Diabetes					1		1						1							
Hydrops																1				
Podagra									4											
Rheumatismus acutus	7				14	1	1	1	2				3			6		2		
Rheumatismus chronicus	7		2		17	2	3	1	2				7	1		13	1	6		
Senectus					1		1		10			3				3		2		
Syphilis primitiva	5		1		15		1		7		2		1			10		1		
Syphilis consecutiva	4	1	1		13		1		2				4			16		4	1	
Tuberculosis	1		1													2				
Epithelioma									1			1	1							
Total	31	2	7		78	3	10	4	31		2	5	20	2		67	2	21	1	
Ratio per M	25.08	1.61	5.66		63.10	2.34	8.09	3.23	25.08		1.61	3.94	16.18	1.61		54.20	1.61	16.99	.80	
Number of sick-days	1,976				4,595				4,016				679			5,180				
Average number sick daily	5.39				12.30				10.97				1.79			14.15				
Average number sick daily per M	4.36				9.95				8.87				1.44			11.44				
Average duration of treatment	63.74				57.75				1.54				32.9			77.31				
LOCAL DISEASES.																				
1.—*Diseases of the nervous system.*																				
Apoplexia									1			1				1			1	
Cephalalgia	1				2		1		1				1	1		1		1		
Dementia	1	1			3	2	1		1							3	3			
Epilepsia	1		1		5		4						1			3		3		
Insolatio	1															3		2		
Irritatio spinalis													1							
Insomnia									1											
Mania					1	1			1							1	1			
Melancholia	1				2				1				1			1				
Nausea marina																1		1		
Neuralgia	2		1		5		2		2			1	1							
Nostalgia	1		1																	
Paralysis	1		1		2	1	1		9			5				1				
Pleurodynia													1							
Sciatica									2											
Tetanus																1				
Vertigo									2											
Total	9	1	4		20	4	9		21			7	6	1		16	4	7	1	
Ratio per M	7.27	.80	3.23		16.18	3.23	7.29		16.99			5.66	4.74	.80		12.94	3.23	5.66	.80	
Number of sick-days	564				1,060				2,132				141			1,107				

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease and injury, &c.*—Continued.

Stations	Hospital, Chelsea, Mass.				Hospital, Brooklyn, N. Y.				Hospital, Philadelphia, Pa.				Hospital, Washington, D. C.				Hospital, Norfolk, Va.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
1.—*Diseases of the nervous system*—Cont'd.																				
Average number sick daily	1.54				2.89				5.82				.38				3.09			
Average number sick daily per M	1.24				2.33				4.70				.30				2.44			
Average duration of treatment	62.66				53				101.52				93.6				99.16			
2.—*Diseases of the eye.*																				
Amaurosis					1															
Conjunctivitis	2	1			2				2		1		1				2		1	
Hemeralopia																	1			
Iritis	1				2															
Keratitis					1	1														
Ophthalmia	1				1															
Pterygium																				
Retinitis	1		1																	
Total	5	1	1		8	1			2		1		1				4		1	
Ratio per M	3.94	.80	.80		6.47	.80			1.61		.80		.80				3.26		1.61	
Number of sick-days	293				301				214				10				301			
Average number sick daily	.80				.99				.58				.02				.84			
Average number sick daily per M	.64				.72				.46				.01				.68			
Average duration of treatment	58.6				41.87				107				10				99.66			

3. *Diseases of the ear.*																			
Otitis					2		1									1		1	
Otorrhœa					1		1												
Surditas	1				2		1									1		1	
Total	1				5		3									2		2	
Ratio per M	.80				3.94		2.34									1.61		1.61	
Number of sick-days	91				396											134			
Average number sick daily	.24				1.08											.36			
Average number sick daily per M	.19				.87											.29			
Average duration of treatment	91				79.2											67			
4.- *Diseases of the teeth.*																			
Odontalgia					1		1												
Total					1		1												
Ratio per M					.80		.80												
Number of sick-days					6														
Average number sick daily					.01														
Average number sick daily per M																			
Average duration of treatment					6														
5.—*Diseases of the circulatory system.*																			
Aneurysma					1			1					1						
Angina pectoris					1	1							1						
Dilatio cordis									1			1							
Hypertrophia cordis																1			
Morbi valvularum cordis	2				3		2	1	1		1		1			6		3	1
Palpitatio					4		1						1			7		2	
Pericarditis	1												1	1					
Phlebitis																			
Varix					1				1										
Total	3				10	1	3	2	3		1	1	5	1		14		5	1
Ratio per M	2.34				8.09	.80	2.31	1.61	2.34		.80	.80	3.94	.80		11.32		3.94	.80
Number of sick-days	60				530				295				212			1,986			

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease and injury, &c.*—Continued.

Stations	Hospital, Chelsea, Mass.				Hospital, Brooklyn, N. Y.				Hospital, Philadelphia, Pa.				Hospital, Washington, D. C.				Hospital, Norfolk, Va.			
		Invalided.				Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																				
5.—*Diseases of the circulatory system*—Continued.																				
Average number sick daily	.16				1.44				.80				.57				5.42			
Average number sick daily per M	.12				1.16				.74				.46				4.38			
Average duration of treatment	20.				53.				98.33				42.4				141.85			
6.—*Diseases of the absorbent system.*																				
Adenitis	2		1		8		1		1				8				5		1	
Total	2		1		8		1		1				8				5		1	
Ratio per M	1.61		.80		6.47				.80				6.47				3.94		.80	
Number of sick-days	.86				973				32				550				309			
Average number sick daily	.23				2.65				.08				1.50				.84			
Average number sick daily per M	.18				2.14				.06				1.21				.67			
Average duration of treatment	43.				121 62				32.				68.88				61.8			
7.—*Diseases of the respiratory system.*																				
Asthma	2				3	2	1		2		1								1	
Bronchitis acuta	4		1		8	1	1						3							
Bronchitis chronica	3		1		5		2		2			1	2				14	2	6	
Catarrhus	3	1	1		5															

| | | |

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease and injury, &c.*—Continued.

Stations	Hospital, Chelsea, Mass.				Hospital, Brooklyn, N.Y.				Hospital, Philadelphia, Pa.				Hospital, Washington, D.C.				Hospital, Norfolk, Va.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES - Continued.																				
8.—*Diseases of the digestive system* - Cont'd.																				
Average number sick daily per M	1.57				1.81				3.55				1.55				3.60			
Average duration of treatment	59.66				34.45				64.56				41.52				62.88			
9.—*Diseases of the genito-urinary system.*																				
Albuminuria					2			1					2				2			1
Chancroides																	1			
Cystitis					2				1		1									
Enuresis					2				8		6						4		2	
Gonorrhœa	15		3		13								5				4		1	
Hæmaturia									1								1			
Nephritis					2		1										1		1	
Orchitis	2				2				1				2				5	2	1	
Paraphymosis													1							
Phymosis																	1			
Pyelitis	1	1																		
Prostatitis																	1			
Spermatorrhœa																	1			
Urethræ strictura					5		1		2			1					4			
Varicocele																				
Total	18	1	3		28		2	1	13		7	1	10				25	2	5	1
Ratio per M	14.56	.80	2.34		22.65		1.61	.80	10.51		5.66	.80	8.09				20.22	1.61	3.94	.80
Number of sick-days	768				1,244				581				350				2,307			

Average number sick daily	2.09				3.39				1.58				.95				6.46							
Average number sick daily per M	1.69				2.74				1.27				.76				5.22							
Average duration of treatment	42.66				44.42				44.69				35.				94.68							
10.—*Diseases of the locomotive system.*																								
Arthritis									1															
Ankylosis					1		1																	
Caries									1															
Necrosis																	1							
Periostitis	2																							
Synovitis					1		1		2								2							
Total	2				2		2		4								3							
Ratio per M	1.61				1.61		1.61		3.23								2.34							
Number of sick-days	74				142				240								5.49							
Average number sick daily	.20				.38				.65								1.5							
Average number sick daily per M	.16				.30				.52								1.21							
Average duration of treatment	37.				71.				60.								183.							
11.—*Diseases of the integumentary system.*																								
Abscessus	1				6			1	2								5	1						
Eczema									4		1						2	1						
Onychia									1															
Unguis involutis													1											
Ulcus	2		1		1				1				2											
Verrucæ																	1		1					
Total	3		1		7			1	8		1		3				8	2	1					
Ratio per M	2.34		.80		5.66			.80	6.47		.80		2.34				6.47	1.61	.80					
Number of sick-days	196				447				401				47				753							
Average number sick daily	.53				1.30				1.09				.12				2.05							
Average number sick daily per M	.42				1.05				.88				.09				1.65							
Average duration of treatment	65.33				63.86				50.12				15.66				94.12							

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease and injury, &c.*—Continued.

Stations	Hospital, Chelsea, Mass.				Hospital, Brooklyn, N. Y.				Hospital, Philadelphia, Pa.				Hospital, Washington, D. C.				Hospital, Norfolk, Va.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																				
12.—*Non-malignant tumors and cysts.*																				
Fibroma					1															
Lipoma					1															
Sarcoma					1	1														
Total					3	1														
Ratio per M					2.34	.80														
Number of sick-days					203															
Average number sick daily					.55															
Average number sick daily per M					.44															
Average duration of treatment					67.66															
POISONS.																				
Alcoholismus					4		1		50		1		2							
Delirium tremens													1							
Total					4		1		50		1		3							
Ratio per M					3.23		.80		40.45		.80		2.34							
Number of sick days					105				1,108				100							
Average number sick daily					.28				3.27				.22							

Average number sick daily per M					.22				2.64				.17									
Average duration of treatment					26.25				22.36				33.33									
VIOLENT DISEASES AND DEATHS.																						
Abrasio					1		1										1					
Ambustio					1				1								1					
Concussio cerebri					1				1								1					
Contusio	2		1		2		2		3								4			3		
Fractura	2		1		7		1	1	7			1	5	1			7			3		
Luxatio					4		2		3				2				3			2		
Stremma	1				3		2		2				1				6					
Vulnus contusum	1				2				2				3				3					
Vulnus incisum									1				1				1					
Vulnus lacceratum					1				3		1						1		1			
Vulnus sclopetarium																	1		1			
Cicatrix memb. trunc. irritab									2													
Total	6		2		22		8	1	25		1	1	12	1			29		9			
Ratio per M	4.74		1.61		17.70		6.47	.80	20.22		.80	.80	9.70	.80			23.46		7.27			
Number of sick-days	507				1,174				1,455				494				2,221					
Average number sick daily	1.38				3.20				3.97				1.34				6.06					
Averge number sick daily per M	1.11				2.58				3.21				1.28				4.90					
Average duration of treatment	84.5				53.36				58.2				41.16				76.58					
Grand aggregate	115	6	32	2	206	16	64	17	213		17	23	121	5	1	5	260	15	79	11		
Ratio per M	93.04	4.74	25.88	1.61	230.48	12.13	51.75	13.13	172.33		13.13	18.60	97.89	3.94	.80	3.94	215.21	12.13	63.91	8.89		
Number of sick-days	6,803				16,374				13,634				4,389				22,476					
Average number sick daily	18.58				44.73				37.25				11.99				61.40					
Average number sick daily per M	15.03				36.18				30.13				9.70				49.67					
Average duration of treatment	59.15				55.31				64.				36.27				84.49					

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease and injury, &c.*—Continued.

Stations	Hospital, Pensacola, Fla.				Hospital, Mare Island, Cal.				Hospital, Yokohama, Japan.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
GENERAL DISEASES—Continued.																
1.—*Zymotic diseases.*																
Erysipelas					1								4			1
Febricula													1			
Febris continua simplex													2			
Febris enterica					1				1				7			1
Febris intermittens					7								58		5	2
Febris remittens	1		1		1				1				15		2	
Febris typhus													1			1
Morbilli													2			
Pertussis													2			
Roseola													1			
Scarlatina													4			
Total	1		1		10				2				97		7	5
Ratio per M	.80		.80		8.09				1.61				78.47		5.66	3.94
Number of sick-days	35				247				96				3,634			
Average number sick daily	.09				.67				.26				1.24			
Average number sick daily per M	.07				.54				.21				1			
Average duration of treatment	35				24.7				48				37.46			
2.—*Constitutional diseases.*																
Adynamia					9		6		3	1			52	4	16	2
Anæmia									1	1			3	1		
Atrophia													1			
Carcinoma													3			1

Diabetes													2		1	
Hydrops													1			
Podagra													4			
Rheumatismus acutus					1				1				34	1	3	1
Rheumatismus chronicus					6		4		4				56	4	15	2
Scrofula									1				1			
Senectus													14		3	3
Syphilis primitiva					4		1						42		6	
Syphilis consecutiva					17		6		3	1			50	2	12	1
Tuberculosis													3		1	
Epithelioma													2			1
Total					37		17		13	3			277	12	57	11
Ratio per M					29.93		13.75		10.51	2.34			224.11	9.70	46.11	8.89
Number of sick-days					2,952				755				20,003			
Average number sick daily					8.06				2.06				6.85			
Average number sick daily per M					6.52				1.66				5.54			
Average duration of treatment					79.78				57.09				72.42			
LOCAL DISEASES.																
1.—*Diseases of the nervous system.*																
Apoplexia					1			1					3			3
Cephalalgia													6	1	2	
Dementia					4				1	1			13	7	1	
Epilepsia									1				11		8	
Insolatio													4		2	
Irritatio spinalis					1		1						2		1	
Insomnia													1			
Mania					3	1	1						6	3	1	
Melancholia					1			1					7			1
Nausea marina													1		1	
Neuralgia					3				1	1			14	1	3	1
Nostalgia													1		1	
Paralysis					6	2	3						19	3	5	5
Pleurodynia													1			
Sciatica	1	1											3	1		
Tetanus													1			
Vertigo													2			
Total	1	1			19	3	5	2	3	2			95	16	25	10
Ratio per M	.80	.80			15.37	2.34	3.91	1.61	2.94	1.61			76.86	12.94	20.22	8.09
Number of sick-days	62				2,303				272				7,641			

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease and injury, &c.*—Continued.

Stations	Hospital, Pensacola, Fla.				Hospital, Mare Island, Cal.				Hospital, Yokohama, Japan.				Total.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																
1.—*Diseases of the nervous system*—Contd.																
Average number sick daily	.12				6.29				.74				2.6			
Average number sick daily per M	.09				5.08				.59				2.1			
Average duration of treatment	.62				121.21				90.66				80.43			
2.—*Diseases of the eye.*																
Amaurosis													1			
Conjunctivitis													10	1	2	
Hemeralopia													1		1	
Iritis					1		1						4		1	
Keratitis									1				2		1	
Ophthalmia													3			
Ophthalmia gonorrhœica									2				2			
Ophthalmia tarsi					1		1						1		1	
Pterygium													1			
Retinitis					1		1						2		2	
Total					3		3		3				26	1	8	
Ratio per M					2.34		2.34		2.34				21.03	.80	6.47	
Number of sick-days					299				388				1,736			
Average number sick daily					.81				1.06				.50			
Average number sick daily per M					.65				.85				.47			

Average duration of treatment					99.66				129.33				66.76			
3.—Diseases of the ear.																
Otitis					2								4		1	
Otorrhœa													2		2	
Surditas					1								5		2	
Total					3								11		5	
Ratio per M					2.34								8.89		3.94	
Number of sick-days					378								999			
Average number sick daily					1.03								.34			
Average number sick daily per M					.83								.28			
Average duration of treatment					126								90.81			
4.—Diseases of the teeth.																
Odontalgia													1		1	
Total													1		1	
Ratio per M													.80		.80	
Number of sick-days													6			
Average number sick daily																
Average number sick daily per M																
Average duration of treatment													6			
5.—Diseases of the circulatory system.																
Aneurysma					1			1					3			2
Angina pectoris					1								3	1		
Dilatatio cordis													1			1
Endocarditis									1	1			1	1		
Hypertrophia cordis					1		1		1	1			3	1	1	
Morbi valvularum cordis					4		1		4	4			21	4	7	2
Palpitatio					2		1		1				15		4	
Pericarditis													2	1		
Phlebitis									1				1			
Varix					1		1		1	1			4	1	1	
Total					10		4	1	9	7			54	9	13	5

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease, and injury, &c.*—Continued.

Stations	Hospital, Pensacola, Fla.				Hospital, Mare Island, Cal.				Hospital, Yokohama, Japan.				Total.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																
5.—*Diseases of the circulatory system*—Continued.																
Ratio per M					8.02		3.23	.80	7.27	5.66			43.68	7.27	10.51	3.94
Number of sick-days					658				383				4,124			
Average number sick daily					1.79				1.01				1.40			
Average number sick daily per M					1.44				.81				1.13			
Average duration of treatment					65.80				42.55				76.35			
6.—*Diseases of the absorbent system.*																
Adenitis													24		3	
Total													24		3	
Ratio per M													19.41		2.34	
Number of sick-days													1,950			
Average number sick daily													.67			
Average number sick daily per M													.54			
Average duration of treatment													81.25			

7.—*Diseases of the respiratory system.*															
Asthma					3	1							12	3	3	
Bronchitis acuta					7				1				28	1	3	
Bronchitis chronica					2		1		3				31	2	10	1
Catarrhus													8	1	1	
Congestio pulmonalis													1			
Hæmoptysis													7		2	
Laryngitis													3			1
Phthisis pneumonica acuta					2	1							6	1	1	1
Phthisis pneumonica chronica	1		1		12		4	1	1	1			46	2	12	9
Pleuritis					1								16		3	
Pneumonia					1								24	2	4	8
Total	1		1		28	2	5	1	5	1			182	12	39	20
Ratio per M	.80		.80		22.65	1.61	3.94	.80	3.94	.80			147.24	9.70	31.55	16.18
Number of sick-days	177				2,012				182				13,608			
Average number sick daily	.48				5.49				.49				4.04			
Average number sick daily per M	.38				4.44				.39				3.75			
Average duration of treatment	177				71.85				36.4				74.76			
8.—*Diseases of the digestive system.*																
Ascites					1								2		1	
Cholera morbus													2			
Cirrhosis hepatis									1				1			
Colica													1			
Congestio hepatis					1								1			
Constipatio													5		2	3
Diarrhœa acuta													9		3	
Diarrhœa chronica									2				8		2	
Dysentery acuta					3			1	2				10			1
Dysentery chronica									1				4		3	
Dyspepsia					3	1			1	1			16	2	3	
Enteritis													1			
Fistula in ano					2								6			
Gastritis													1			1
Hæmorrhois									1				20	3	3	
Hepatitis acuta									1				2			
Hepatitis chronica													2		1	
Hernia	1		1		5		4		1	1			20	1	14	
Icterus									1				10	1		
Peritonitis													1			1
Pharyngitis																

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease and injury, &c.*—Continued.

Stations	Hospital, Pensacola, Fla.				Hospital, Mare Island, Cal.				Hospital, Yokohama, Japan.				Total.			
		Invalided.				Invalided.				Invalided.				Invalided.		
Diseases and injuries.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.	Cases.	To hospital.	From service.	Dead.
LOCAL DISEASES—Continued.																
8.—*Diseases of the digestive system*—Continued.																
Tonsillitis													6			
Vermes									1				1			
Total	1		1		15	1	4	1	12	2			132	7	32	6
Ratio per M	.80		.80		12.13	.80	3.23	.80	9.70	1.61			106.79	5.66	25.88	4.74
Number of sick-days	143				762				253				6,756			
Average number sick daily	.39				2.08				.96				2.30			
Average number sick daily per M	.25				1.68				.77				1.86			
Average duration of treatment	143.				50.8				29.41				51.18			
9.—*Diseases of the genito-urinary system.*																
Albuminuria													6			2
Chancroides													1			
Cystitis					1								4		1	
Enuresis													14		2	
Gonorrhœa													37		4	
Hæmaturia													2			
Nephritis													2		2	
Orchitis					1								13	2	1	
Paraphymosis													1			
Phymosis					1								2			
Pyelitis													1	1		
Prostatitis													1			

Spermatorrhœa					1								2			
Urethræ strictura					3		2		7				21		3	1
Varicocele					1		1						1		1	
Total					8		3		7				109	3	20	3
Ratio per M					6.47		2.34		5.66				88.18	2.34	16.18	2.34
Number of sick-days					618				584				6,512			
Average number sick daily					1.68				1.59				2.22			
Average number sick daily per M					1.35				1.28				1.79			
Average duration of treatment					77.25				83.42				59.74			
10.—*Diseases of the locomotive system.*																
Arthritis													1			
Ankylosis													1		1	
Caries									1	1			2	1		
Coxalgia					1		1						1		1	
Necrosis													1			
Periostitis													2			
Synovitis					1								6		1	
Total					2		1		1	1			14	1	3	
Ratio per M					1.61		.80		.80	.80			11.32	.80	2.34	
Number of sick-days					103				47				1,555			
Average number sick daily					.28				.12				.39			
Average number sick daily per M					.22				.09				.31			
Average duration of treatment					5.15				47.				82.5			
11.—*Diseases of the integumentary system.*																
Abscessus									1				15	1		1
Eczema													6	1	1	
Onychia													1			
Unguis involutis													1			
Ulcus									1				7		1	
Verrucæ													1		1	
Total									2				31	2	3	1
Ratio per M									1.61				25.08	1.61	2.34	.80
Number of sick-days									38				1,882			

TABLE III.—*Showing the number of cases, invalided, and dead, for each disease and injury, &c.*—Continued.

Stations	Hospital, Pensacola, Fla.				Hospital, Mare Island, Cal.				Hospital, Yokohama, Japan.				Total.			
Diseases and injuries.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.	Cases.	Invalided. To hospital.	Invalided. From service.	Dead.
LOCAL DISEASES—Continued.																
11.—*Diseases of the integumentary system*—Continued.																
Average number sick daily									.10				.64			
Average number sick daily per M									.08				.52			
Average duration of treatment									19.				60.70			
12.—*Non-malignant tumors and cysts.*																
Fibroma													1			
Lipoma													1			
Sarcoma					1			1					2	1		1
Total					1			1					4	1		1
Ratio per M					.80			.80					3.23	.80		.80
Number of sick-days					45								248			
Average number sick daily					.12								.08			
Average number sick daily per M					.09								.06			
Average duration of treatment					45.								62.			
POISONS.																
Alcoholismus					4								60		2	
Delirium tremens													1			
Total					4								61		2	

Ratio per M				3.23							49.35		1 61	
Number of sick-days				100							1,503			
Average number sick daily				.22							.51			
Average number sick daily per M				.17							.41			
Average duration of treatment				25.							24.63			
VIOLENT DISEASES AND DEATHS.														
Abrasio											2		1	
Ambustio											3			
Concussio cerebri				1							4			
Contusio	1			1		1		1			14		7	
Fractura				11		4		3			42	1	8	2
Luxatio				1							13		4	
Stremma											13		2	
Vulnus contusum								1			12			
Vulnus incisum				1		1					4		1	
Vulnus lacceratum								2			7		2	
Vulnus punctum								1			1			
Vulnus sclopetarium											1		1	
Cicatrix memb. trunc. irritab											2			
Total	1			15		6		8			118	1	26	2
Ratio per M	.80			12.13		4.74		6.47			95.46	.80	21.03	1.61
Number of sick-days	56			896				561			7,334			
Average number of sick daily	.15			2.36				1.53			2.50			
Average number of sick daily per M	.12			1.90				1.23			2.02			
Average duration of treatment	56.			57.73				70.12			62.15			
Grand aggregate	5	1	3	155	6	48	6	65.	16		1,236	65	244	64
Ratio per M	3.94	.80	2.34	125.40	4.74	38.83	4.74	52.55	12.13		1,000	52.55	197.40	51.75
Number of sick-days	473			11,343				3,659			79,151			
Average number sick daily	1.29			30.99				9.99						
Average number sick daily per M	1.04			25.07				8.08						
Average duration of treatment	94.6			73.18				56.28			64.03			

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